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# Special Libraries, October 1981

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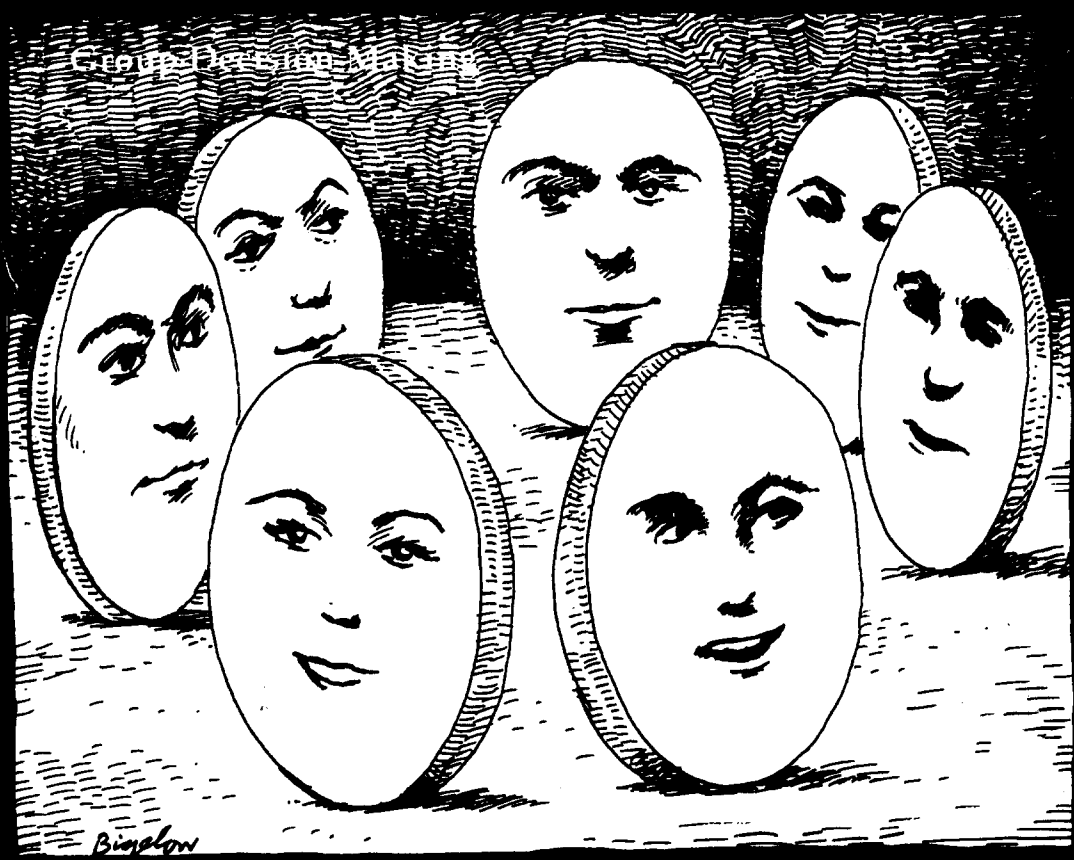


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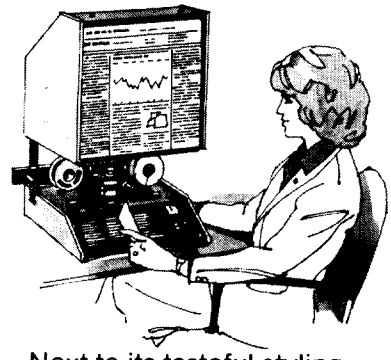

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# LETTERS

### Defining Professionalism

Your January issue [*SL* 72 (no. 1) 1981] has two articles which are of special interest to me: *Small Libraries: Keeping the Professional Position Professional* [by Janice Holladay] and *Internship Programs in Special Libraries* [by Ron Coplen and Muriel Regan]. At one time I, too, had hoped that my program would be, as the authors of the latter article state in their subtitle, "a mutually beneficial experience for librarian and student." My aim was to drill into the students the professionalism that was inherent in me dating back to my Columbia days and enhanced by all my SLA activities in the Southern California Chapter, as well as some national committees.

I encountered some interesting reactions to professionalism per se in the course of my program. Initially, it was called the SPA program, the SPA being the designation for the Student Professional Assistants in the California State system receiving field work experience in the various disciplines. These 50 students were carefully selected from the local library schools, personally supervised by me, and well paid. They were exposed to all of the activities described by the authors in the *SL* January issue, and they were encouraged to correlate all of their work experiences with their various and sundry courses in library school. My own feeling has always been that there is no experience like work experience to become a true professional.

The students were basically students. I anticipated supervision—after all, what is a training program for?—but not the kind of monitoring that, in effect, had to come about. I see now that if there were to be a clear understanding between the library school and the student that what is to be offered is professional field work experience, it would clarify the relationship, in fact formalize it, with evaluations and grades. Possibly what one is apt to overlook, in the zeal for professionalism, is that we, too, were once students and were subjected to the discipline of courses and all that it entails.

What was disconcerting, however, was the students' reluctance to handle various routine work in the name of professionalism! Certainly as SLA members, we are all much concerned about professionalism in all of its ramifications, but we are also aware that daily routines may often entail work which may not be, strictly speaking, professional. Yet, it is our responsibility to maintain the professional milieu which Janice Holladay does so effectively in her article. Perhaps professionalism is a concept which needs to be defined in depth. Certainly this is true for the beginner in SLA.

**Sherry Terzian**
**Mental Health Information Service**
**Neuropsychiatric Institute, UCLA**
**Los Angeles, Calif.**

### Authors' Reply

The authors agree with Sherry Terzian that there is "no experience like work experience to become a true professional" and an internship must by definition be work and experience. True, none of us particularly like to do some of the routine tasks which we must do, but we do know it is part of the job.

An internship should be designed to make the student aware that it *is* part of the job—but *only* part of the job. There must be a "clear understanding" with evaluations and grades to make it worthwhile. There must be supervision because they are students. But if all concerned (student, librarian, and library school) begin the internship with the same parameters, a professional manner and attitude will evolve, and it will be a "mutually beneficial experience for librarian and student." In the context of these statements, the authors have had no bad experiences with interns, only good ones.

**Ron Coplen**
**Harcourt Brace Javonovich Library**
**Muriel Regan**
**Rockefeller Foundation Library**
**New York, N.Y.**

### Computer Software Workshop

A. J. Neumann of the Institute for Computer Science and Technology, National Bureau of Standards, is organizing a workshop on computer software documentation standards and guidelines, to be held at the NBS site in Gaithersburg, Md., on Mar 3, 1982. In addition to invited speakers, Neumann plans to have discussants, critical evaluators, reviewers of papers, and panels. He would like to involve all elements of the library and information community in this

workshop, to get cross-disciplinary input of experiences in indexing, abstracting, and document description.

I have agreed to survey library and information groups that I thought might have an interest in this topic. If your group or some of its members have an interest in such areas as classification schemes for software applications, abstracting of program descriptions, adequate definitions, and unique, meaningful data description terminology, please contact me. I need suggestions for participants in discussions, panels, or critical evaluations.

For further information, I can be reached at the National Bureau of Standards Library, Admin. E106, Washington, D.C. 20234 (301/921-3405).

**Patricia W. Berger**
**Library and Information Services Division**
**National Bureau of Standards**
**Washington, D.C. 20234**

### Immigration Information

After a quarter century of SLA membership in the Science-Technology Division, I have developed an avocational interest which I do not recognize as being represented in any other Division. This new interest is in historical demography. Through it, I have become acquainted with numerous professional genealogists. I do not find genealogy, either, represented among SLA Divisions; perhaps its own special library network does not need SLA, although that is something to wonder about.

My reason for writing is in search of certain demographic information. I find no U.S. immigration figures before 1820. I estimate these numbers (in thousands) of immigrants per decade: one (thousand)for the ten years preceding 1630, 1640/2, 1650/2, 1660/3, 1670/4, 1680/5, 1690/6, 1700/7, 1710/8, 1720/10, 1730/13, 1740/16, 1750/19, 1760/24, 1770/29, 1780/36, 1790/44, 1800/54, 1810/67, 1820/82. The 1830 figure, for immigrants arriving 1820–1829, is 128 from official records. I would welcome any comment upon my estimates, but particularly any citation of actual data, which I have been unable to uncover.

**Gilbert S. Bahn**
**615 Brandywine Dr.**
**Newport News, Va. 23602**

### Stumped

Our library has been stumped by a certain request for information. About fifteen years ago a man in our organization dealt with a private company located in a small town in the Midwest which maintained a library of manuals for old industrial and scientific laboratory equipment. It published a catalog listing its holdings, and if an individual wanted to order a manual for a particular piece of equipment, the company would supply a copy for a fee.

We have contacted various scientific, engineering, and instrumentation agencies, but none of them are aware of the organization I described. If any readers of *Special Libraries* have any information regarding such an organization, we would appreciate hearing from them. We are not interested in obtaining any particular manuals from any particular vendors, but we would like to find out what happened to the organization in question. If it still exists, we would like to find out how to contact them.

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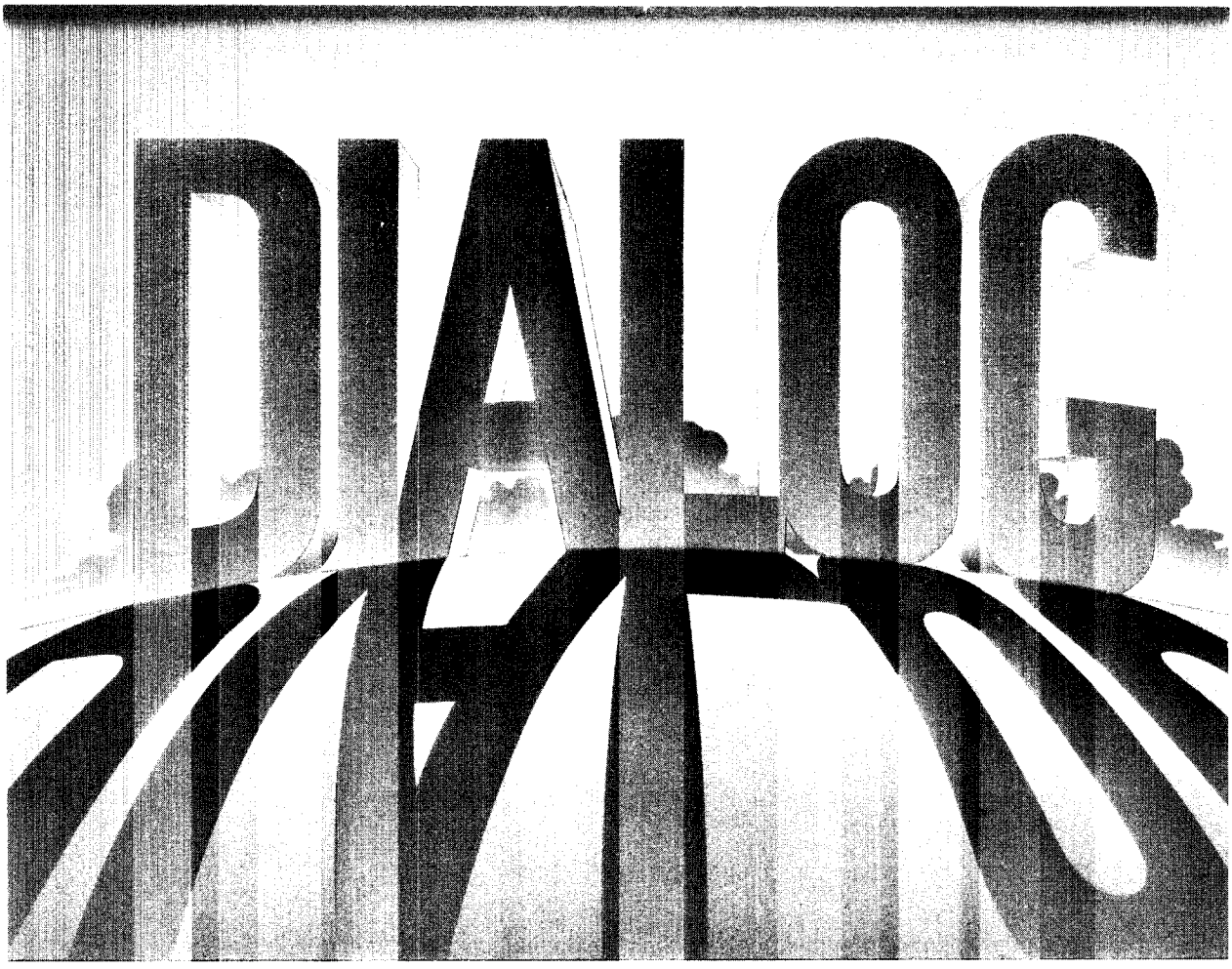


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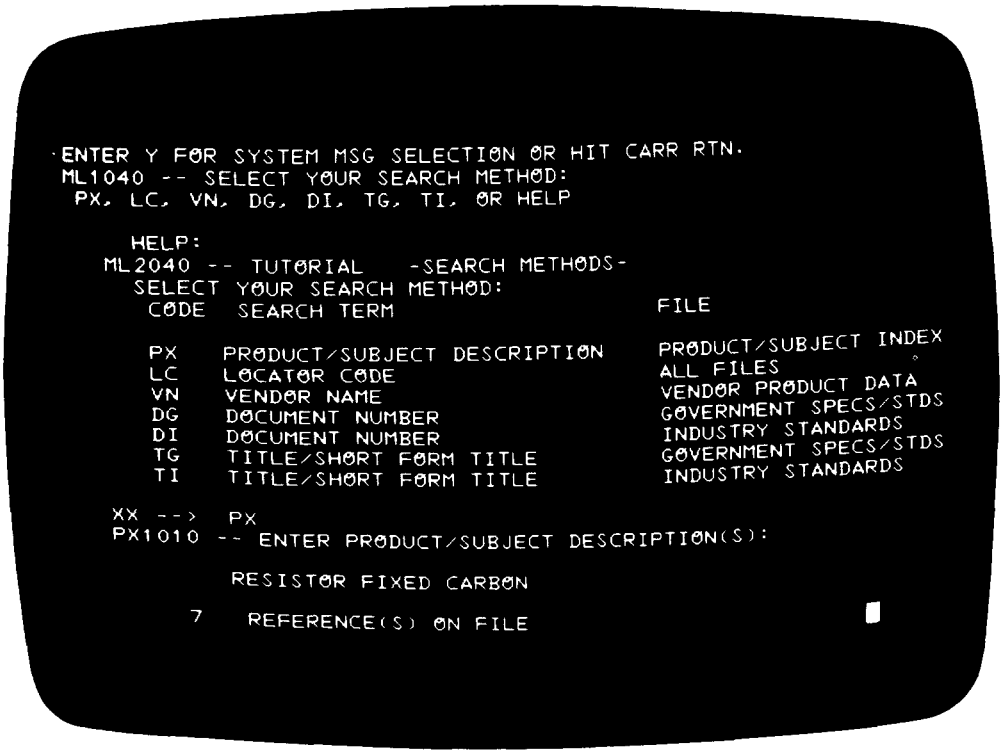


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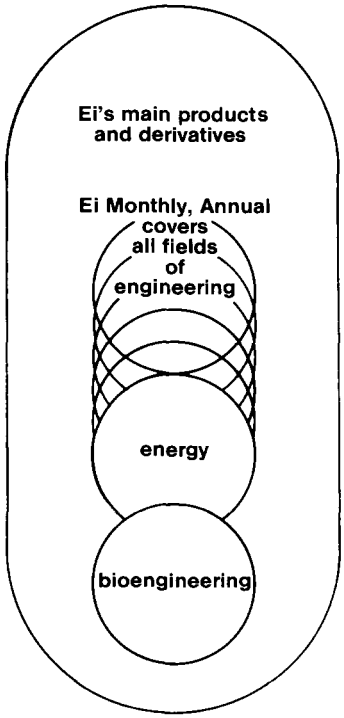


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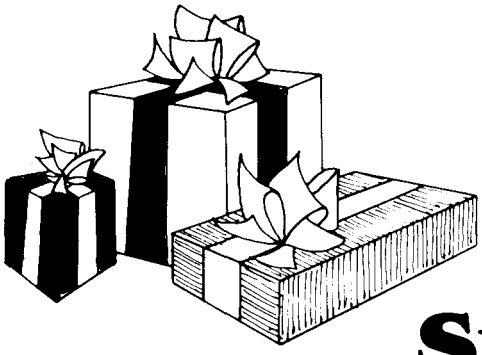

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# Decision-making Processes for Information Managers

***Margaret K. Park***

Computing & Information Services, Boyd Graduate Studies Research Center, The University of Georgia, Athens, Ga. 30602

■ **Harrison's model of group decision making is described and discussed in terms of its implications for the decisions librarians and other information managers are called upon to make. Attention is given to questions of decision quality and to factors, such as group size, reward and penalty mechanisms, and group norms, which affect decision making within groups. Information managers have special responsibilities when it comes to group decision making: improving their own group decision-making skills and processes, removing barriers to effective group decision making, broadening the information resource base they and their clients use in decision making, designing information systems to facilitate decision making, and raising the visibility of the library and information sciences as contributing disciplines to the decision sciences.**

Group decision making is on the increase at every level in every kind of organization and institution. Teams, task forces, committees, consortia, advisory groups, and councils have become a matter of course. The increasing complexity of decisions inherent in technology-driven change may be a contributing factor. Individuals may have sufficient knowledge and expertise to make the routine, operational decisions in most of our organizations, but the complex, nonroutine, nonrecurring problems that look toward the future usually require collective approaches to decision making.

Whether one believes that group decision making is better or worse than individual decision making, the fact remains that collective choice, wrapped in the mantle of ideas like participative management, is rapidly becoming a way of life in most organizations:

> Too many decisions, too fast, about too many strange and unfamiliar problems. . . . Our institutions are reeling from a decisional implosion. (Alvin Toffler, *The Third Wave*)

Group decision making is relatively new to U. S. organizations and is not always as successful as one might wish.

The potential advantages of group decision making—greater knowledge or information about the problem, more alternatives to consider, better comprehension of the decision, greater acceptance of the final choice—are often outweighed or negated by the potential liabilities—social pressure which silences disagreement and favors consensus, domination by vocal individuals or minorities which prevents alternatives from being seriously considered, resolution of conflict through compromise or negotiated settlements which results in decisions of low quality. While these liabilities do, unfortunately, occur far too frequently, they are not necessarily intrinsic to group decision making. The characteristics of effective groups are well known, and positive actions can be taken to establish productive conditions for effective group decision making. These same criteria can also be used to diagnose dysfunctional or ineffectual decision-making groups, with a view toward correcting the deficiencies or eliminating the causes of impaired effectiveness. Knowing the mechanisms of decision-making processes, the factors affecting the quality of decisions, and the role of information is the first, and perhaps most important, step in producing effective group decisions.

## The Decision-making Process

Over the past decade, researchers in the decision sciences have placed increased emphasis on viewing decision making as an integrated, interdisciplinary phenomenon. No longer is decision theory confined to the narrow, restrictive scope of operations research, statistical analysis, and strategic planning which arose from World War II. The behavioral sciences, as well as the physical and mathematical sciences, are now making substantial contributions. This integrated approach draws on the knowledge of individual behavior from psychology, group behavior from sociology and social psychology, values and ethics from philosophy, the concepts of utility and probability from economics and statistics, modeling and simulation techniques developed in mathematics and operations research, and environmental and social considerations obtained from such fields as law, anthropology, and political science.

A small but growing group of researchers is beginning to focus attention more broadly on the *process* of decision making rather than just the decisions or the decision makers. They are also beginning to look at the various individual and social phenomena of decision-making groups under conditions of imperfect knowledge and constraints on time and money, using decision criteria based on assumptions of value other than cost-effectiveness.

## The Harrison Model

E. Frank Harrison, in his excellent book on the managerial decision-making process (*1*), presents a general model as it applies to group decision making for nonroutine, nonrecurring decisions with a good deal of uncertainty of outcome—the kinds of policy and planning decisions that committees and task forces usually tackle.

Harrison's model consists of six major steps, or phases: 1) setting organizational objectives, 2) searching for alternatives, 3) comparing and evaluating alternatives, 4) choosing among alternatives i.e., making the decision, 5) implementing the decision, and 6) monitoring and controlling the implementation. His model also provides for substantial feedback between steps. Objectives can be revised in light of the search for alternatives; decisions can be modified in light of implementation experience; new alternatives can be identified when implementation proves unsuccessful.

This model is fundamentally one of rational decision making in which the evaluation and selection of the preferred alternative is based upon a perceived advantage accruing to the decision maker. It assumes that decisions will be based upon identified alternatives and can be judged in terms

of stated objectives through use of logical reasoning processes.

By contrast, nonrational decision making refers to decisions which are made without heed for the consequences, and which may stem from such sources as: commitment to a dogma or theory that shuts out relevant data or is inapplicable to the situation; education, training, and experience that prevents attainment of the "whole view"; or limited or distorted perspectives resulting from bureaucratic parochialism (2).

Emotional goals, such as honor, prestige, or revenge, may be factors in either rational or nonrational decision making. A decision based on an emotional objective would be quite rational if the consequences were understood and weighed, but a decision based on momentary passion rather than sober judgment would be nonrational.

While there may be scant research to substantiate the belief that rational decision-making processes lead to better decisions than do nonrational processes, it is certainly apparent that writers in the business management field, as well as researchers in many supporting fields, clearly believe that better decisions do result when objectives are set and alternatives judged in terms of satisfying these objectives.

## Setting Objectives

Volumes have been written about setting objectives—Step 1 of Harrison's model. Management by objectives (MBO) and all its offspring have been around for some time. Setting objectives can have a decided impact on decision making. Objectives can provide the basis for cooperation and development of good morale among group members, for example, serving to focus attention on the purpose for which the group was convened. They can serve to identify the different and often conflicting goals of individuals or the constituencies they represent. They serve as the criteria against which decisions are, or should be, judged. All of which assumes that the objectives of a group can and will be formally stated. Such does not always happen, of course; hidden agendas—hidden objectives—often lurk within a group.

Members of the group may not wish to solve a problem, may not wish to make a decision, or may not wish to consider any change to the status quo; however, they would probably not be willing to state, as their objective, sandbagging the effort. But whether explicit or implicit, such objectives generally become known to the group through the behaviors of its members.

**Setting objectives can provide the basis for cooperation and the development of good morale among group members.**

Perhaps of more interest is what happens, or fails to happen, when a group simply does not give attention to defining objectives, or does so only at some later point in the group's life. This failure occurs more often than might be expected. It is not unusual for someone in a group, after hours or days or even weeks of haggling, to stop discussions cold by asking "just what is it we are supposed to be doing?"

By focusing attention on setting objectives early in the group decision-making process, it should be possible to obtain more effective and more efficient decisions. If the objectives of the group members prove so incompatible and irreconcilable that a satisfactory decision is impossible, the effort can be abandoned early, before scarce funds are spent and tempers flare. Perhaps a group effort was not the best way to make the decision in the first place. Perhaps the membership of the group was not appropriate. Upon examination of objectives, what may first appear to be a technical problem may prove to be a policy question.

## The Search for Alternatives

Harrison's second stage is the search for alternatives likely to fulfill the objectives. This search may be informal, drawing only upon the opinions of a few members of the group, or formal, involving a deliberate effort and an established methodology for obtaining information about possible alternatives.

The breadth of the search domain and the willingness of the group to consider new or novel alternatives can greatly affect the quality of the decision. It is known, for example, that lower quality decisions often result when the set of alternatives is limited or the group reaches closure on a single alternative early in the deliberations. In fact, a group which adopts or endorses the solution advanced by one of its members or subgroups without judicious consideration of other alternatives is not performing group decision making at all. Any attempt on the part of an individual or faction to force adoption of a particular solution should be viewed with concern, if not alarm, at this stage of the process. Cooperation, tolerance, and openmindedness are essential for identifying alternatives. Conflict or competition at this stage is counterproductive.

The breadth of the search for alternatives will also influence the quality of the resultant decision. A homogeneous group drawn from similar organizations and backgrounds will, inevitably, have a smaller pool of collective knowledge than will a heterogeneous group. A group of librarians, for example, with limited background in automation, will generally have a smaller pool of collective knowledge about data processing than will a group made up of both librarians and data processing professionals. Similarly, a group of data processing professionals can be expected to have little knowledge of the library sciences. Thus, the more heterogeneous the composition of the group, the richer the knowledge base is likely to be for identifying alternatives.

It requires attention to interpersonal communications, willingness to learn, openness to unfamiliar viewpoints, and recognition of contributed expertise to exploit this broader knowledge base. The defensive, protectionist, and competitive behaviors which sometimes surface in mixed groups will prove counterproductive. Consequently, some groups would rather accept the lower quality decision limits of an I'd-rather-do-it-myself approach than face the challenges posed by interdisciplinary groups.

Alternatives need not necessarily be considered competitive or mutually exclusive. They can often be combined to form even better alternatives. For example, when Churchill was presented with the alternatives of a southern assault on Nazi-held Europe from the Mediterranean or a western assault from England, he succinctly replied: "Or both." Combined alternatives not only extend the list of choices available but also provide an effective way of achieving a win-win solution.

## Comparing Alternatives

Step 3 of Harrison's model deals with comparing and evaluating alternatives. Drucker points out: "A judgment in which one can only say 'yes' and 'no' is no judgment at all. Only if there are alternatives can one hope to get insight into what is truly at stake" (3).

The desirability of alternatives and their expected outcomes will vary, often widely, among participants in a group. For any given problem, the priority rankings assigned to alternatives may vary within the group, and different values may be attached to such factors as risk, uncertainty, change, conformity, and even information.

The group dynamics involved at the point of evaluating and comparing alternatives are complex and often emotion-laden. It takes a skilled group leader, along with sensitive and mature group members, to transcend rivalries and biases. Unfortunately, few profes-

sionals outside the social sciences have had formal training and experience in small group dynamics. Group skills are important and can make all the difference in the world between a mediocre and a great group.

## Choosing Among Alternatives

The fourth stage of Harrison's model deals with making the decision—making the choice among alternatives. This stage frequently presents a complex cognitive problem, particularly in important decisions where the choice can affect many people, commit substantial financial resources, or chart a course of action from which there may be no reasonable return.

Individuals differ widely in their attitudes toward decision making and its attendant risks, rewards, and responsibilities. Psychological research tells us that individuals with dominant risk-avoidance preferences are generally willing to accept more risk in groups, where the responsibility for the decision can be shared, than they will as individuals. Individuals with a preference for risk acceptance, on the other hand, sometimes find the group decision-making processes frustrating or intolerable. They enjoy the excitement of risk; they value the high payoffs that can come with success; and they generally shrug off any criticism that may come with failure, the pleasure having come with the doing.

Group decision making tends to mediate the effects of risk and uncertainty, resulting in decisions with somewhat higher risk and reward potential than is preferred by the more conservative members but with lower risk and reward potential than is preferred by the adventurous members.

## Implementation and Follow-through

The last two stages of Harrison's model—implementing the decision and monitoring the progress—provide the test of the decision and of the decision-making process. According to Harrison: "A decision made without implementation is merely an interesting abstraction. It is in the implementation phase that the choice moves from the intellectual realm to a commitment of time, energy, and resources" (*1*, p. 36).

The success or failure of the implementation often hinges on the quality, quantity, and timeliness of information disseminated to those affected by or responsible for the implementation. Even the best decision can prove unsatisfactory if not understood, or if misunderstood. It is interesting to note that *perceived* involvement in the process of decision making and implementation is the key to success, rather than *actual* involvement (*4*).

Contrary to what has often been asserted concerning participative management, people need not actually have participated in the decision making to accept a decision if they know their interests and concerns have been considered and if they can understand the basis upon which the decision was made. Good communications, based on accurate and timely information resources, are critical to the implementation stages of this decision-making process model.

## The Decision Quality Question

No universal agreement exists as to what constitutes a best, or even a good, decision. For years, the closed decision models of economic theory held sway, with the quality of the decision based on the maximization of some sought end such as profits, income, physical goods, or some form of utility. This maximization philosophy still dominates decision making in the world of business and government, with its rather narrow focus on cost or cost-effectiveness as the sole criterion for decision making.

There is increasing dissatisfaction with this economics-based philosophy, partially because its assumptions of perfect knowledge of alternatives and their consequences are unrealistic for real-world choices and partially be-

cause it fails to take into account social, ethical, and environmental considerations.

The newer models of decision making espouse the concept of "satisficing" decisions. Under this philosophy, the best decision will be that alternative, among those available, which will lead to the most complete satisfaction of goals and objectives. Likewise, any decision that satisfies the objectives is a good decision.

Groups are often considered to be conservative or poor decision makers because the need to arrive at consensus may result in a choice at the lowest common denominator. However, cases of exceptionally high quality decision making by groups, while rare, are not unknown. The Kennedy administration's handling of the Cuban Missile Crisis in 1962 has become a textbook case study of effective group decision making.

and conflict than do groups with low degrees of cohesiveness.

While some conflict is necessary and constructive, cooperative groups will, on the average, make better decisions than groups with extensive interpersonal conflict. Conflict resolution strategies that attempt to reduce stress through forced compromise, authoritarian behavior, or majority rule are usually detrimental to decision quality. Consensual or unanimous decisions, while significantly more difficult to achieve, are much more likely to be superior to those obtaining only majority support. Drucker attributes the effectiveness of the Japanese' style of decision making to their concentration on defining the question and reaching decisions through consensus (*6*).

In terms of Harrison's multistage model, groups are probably superior to individuals in setting goals and objectives because of the greater amount of

**Groups can also be more effective than individuals in comparing and evaluating alternatives and in making the choice—provided the conditions for effective group functioning have been met—because of the wider range of critical viewpoints.**

Group decision making frequently produces better results than those of the average individual; yet, it is seldom better than the best individual (*5*). In fact, a group's superior performance may result from the efforts of one superior problem solver. Cases have also been made for the superiority of group decisions made by experts from several fields due to the synergism that can result from highly cohesive interaction among group members. Indeed, cohesiveness is probably the single most influential determinant and indicator of group effectiveness. Highly cohesive groups work harder, identify more closely with, and are more enthusiastic about the goals of the group and exhibit much less internal competition

knowledge available to their combined membership. Groups can also be more effective than individuals in comparing and evaluating alternatives and in making the choice—provided the conditions for effective group functioning have been met—because of the wider range of critical viewpoints. However, the search for alternatives requires individual effort, either by the members of the group or by individuals supporting the group in staff capacities. Harrison feels, too, that the implementation of a choice, once made, must be accomplished by individual managers who accept personal responsibility for the outcome. Thus, in terms of Harrison's model, groups are potentially superior to individuals in three of the

six steps; individuals are superior in the remaining three steps.

Since the quality of group decisions is so heavily dependent upon the effectiveness and cohesiveness of the group, it is important to look at the factors affecting these two variables and the actions which can be taken to produce optimal conditions for group functioning.

## Factors Affecting Group Decision Making

Entire books have been written on the factors affecting group behavior. Each of the factors is, in itself, a complex topic, with the complexity further increased by interactions among the variables. The following discussion simply skims the surface, calling attention to some of the major factors which seem especially relevant to the decisions information managers are called upon to make.

**Group Size**—Other things being equal, size has an inverse relationship to group cohesiveness. The larger the group, the greater the difficulty establishing good communications among the members, achieving common understanding of goals and objectives, and reaching consensus. As group size increases, factions and coalitions tend to form, often to the detriment of group functioning.

Enlarged group size also tends to foster political rather than analytical solutions to disagreement. Centrality and dominant leadership tend to increase with group size, as well, which in turn leads to identification and evaluation of fewer alternatives. Opinions concerning optimal group size vary, but it is generally felt that a size of five to seven members is generally best, with effectiveness decreasing as size increases beyond that point.

The effects of group size would seem of particular interest and concern to librarians and other information professionals, given the extensive use of rather large groups (committees, advisory boards, consortia, task forces, and so on), especially at the regional, national, and international levels. Even those groups which start out at moderate size—perhaps 10 to 12 members—swell rapidly as other interested parties are added as members or observers. The motivation is clear: group membership is being used as a means of obtaining input to the deliberations so all interests are ostensibly represented. It would be much more effective, both for assuring representation of viewpoints and improving decision making, if other methods were used to obtain this important information. Smaller decision-making bodies, coupled with the use of position papers, hearings, open forums, and debates, would be much more effective than these large representative bodies.

**Rewards and Penalties**—The effects of rewards and penalties are closely tied to attitudes toward risk and uncertainty. As noted earlier, individuals vary considerably in their attitudes toward risk, and these preferences strongly influence the values they accord alternatives. While risk acceptance-risk avoidance behaviors are usually considered individual traits, the range within which an individual can comfortably work, vis-a-vis risk and uncertainty, is situation-dependent.

Individuals may be willing to operate under conditions of considerably greater uncertainty in their personal lives than in their professional lives, or vice versa. An individual may be willing to make much riskier decisions in one job than in another. A person would likely accept a decision with greater risk of failure if the reward system favors the effort and attaches little or no disgrace to failure. However, if rewards are based only on a successful end result, and the penalties for failure are perceived as harsh, then even small degrees of risk or uncertainty may be unacceptable. Under such conditions, decision makers, whether individuals or groups, will tend toward choices where the probabilities of both success and failure are zero, that is, toward the choice for no decision at all

or for maintenance of the status quo.

The reward-penalty mechanisms represent one of the key differences between librarians and data processing professionals. At the risk of oversimplifying and overgeneralizing, it seems that data processing professionals work under the maxim "nothing ventured, nothing gained" and are quite willing to explore the unknown under relatively high levels of both risk and uncertainty. In fact, the programmer's most commonly used problem-solving technique is probably trial and error. Substantial personal and professional rewards—"satisficers"—are associated with being first—first to design a new system, first to solve a particularly challenging computer hardware problem, first to introduce a new product into the data processing market, first to publish research leading to a breakthrough in applied technology.

**The reward-penalty mechanisms represent one of the key differences between librarians and data processing professionals.**

Failure, on the other hand, tends to be dismissed with little or no thought, beyond taking note of its value as information concerning what does and does not work. Negative results are routinely published, along with an analysis of the reasons for the failure. In fact, more professional reproach is accorded the person or group which fails to heed the warning and proceeds blindly down the same primrose path than is associated with the person or group making the initial discovery that a particular method, approach, or product would not work.

By contrast, the attitudes toward the rewards for innovation and the perceived consequences of failure seem almost reversed in the library field, and other fields as well. The penalties associated with failure are perceived as so serious that new or unfamiliar alternatives with even modest amounts of uncertainty or risk will only be considered with reluctance. Obviously, individual differences vary widely among professionals in each of these fields. Not all data processing people exhibit risk-acceptance behaviors any more than all librarians exhibit risk-avoidance behaviors. However, the differences seem pervasive enough to suggest they represent part of the phenomenon of group norms for these two professions.

**Group Norms**—Group norms specify the standards of conduct that must, as the price of continued membership, be subscribed to by the participants. Norms are ideas specifying what members should do, ought to do, are expected to do, under given circumstances (*7*). They also dictate what members ought not to do. Norms are enforced by group processes such as education, surveillance, warning, disciplinary or rewarding actions, and social pressures. If a deviate does not heed the warning, the group may alienate or even expel the nonconformist.

Group norms are necessary, though not necessarily sufficient, to achieve cohesiveness, and in this regard they are positive factors. However, they can also have negative influence when they freeze out objectives, alternatives, or values of interested individuals or groups. Norms created or adopted by the group for purposes of achieving stated objectives would be highly desirable, while norms employed either consciously or unconsciously for purposes of dictating the choice or decision would be highly detrimental to achieving the benefits of group decision making.

Group norms may occasionally be established by a group after due consideration of its objectives and the processes most favorable to their achievement. Rules of procedure, including the rule as to how decisions are to be made, could be considered formally adopted norms. More often, though, members of the group simply

bring to the group whatever norms they are accustomed to obeying. Consequently, homogeneous groups tend to adopt pre-established norms, while heterogeneous groups may need to give formal attention to determining the standards of behavior.

Groups which do not give attention to this important matter early in their life find themselves wrestling with conflicting values and behaviors, often without understanding what is happening or the barriers being raised to effective decision making.

Earlier, it was suggested that standards of behavior vis-a-vis risk/uncertainty and reward/penalty might well be group norms. Collegiate educational programs, especially at the graduate level, have as one of their primary purposes indoctrination into the norms and mores of the particular discipline or field. This socialization process occurs to some extent in all fields (woe betide the graduate student who fails to at least appear to conform), and it is perhaps strongest in those professions, such as medicine, law, accounting, and perhaps librarianship, which are self-regulated through examination, certification, and accreditation procedures. To the extent these norms support and enhance group decision making, such academic programs and professional accreditation procedures are performing a valuable service for their members. To the extent the established norms are detrimental to group decision making—assuming group decision making is an important function of the professionals and managers in the field—attention needs to be given to deliberately and systematically altering these norms—an undertaking with considerable risk and uncertainty in its own right.

**Decision Complexity**—The difficulty of reaching a decision generally increases with the complexity of the problem to be solved—up to a point. Beyond the point where the complexity exceeds the level at which a group is prepared and willing to cope, the members will either back away from the decision-making situation altogether or find some way to reduce the complexity to an acceptable level. Unfortunately, the most commonly used techniques also reduce decision quality: alternatives are excluded; information is disregarded; objectives are narrowed; votes are taken.

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**Group norms are necessary, though not necessarily sufficient, to achieve cohesiveness, and in this regard they are positive factors.**

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Two methods for reducing complexity without compromising decision quality are systematic problem-solving strategies and information repackaging.

Problem-solving strategies reduce complexity by partitioning the problem into manageable pieces. Folklore abounds with such problem-solving strategies: "take your time"; "divide and conquer"; "think it through"; "one step at a time." They represent sage advice. Harrison's six-step model is a good example; it reduces the complexity of the decision-making process by partitioning it into manageable pieces addressed in a logical sequence.

Another example is the systems approach which is so widely taught in business administration, the computer and information sciences, and related fields. Under the systems approach, the development of a computer-based information system is handled in six more or less discrete stages: requirement definition, design, production (programming), installation, testing, and operations/maintenance.

The scientific methodology traditionally used by the physical sciences and increasingly by the behavioral sciences is another example of a systematic problem-solving strategy. At a more detailed level, the data processing field has generated a whole grab bag of problem-solving techniques designed to reduce

systems design and programming complexity to manageable levels: flowcharts, HIPO diagrams, structured programming, pseudocoding, to mention a few.

One of the most promising methodologies is Myers' composite design technique (*8*). Although originally intended for use in designing complex computer software, this technique has also been used for higher level systems analysis and design. Composite analysis should be of particular interest to information professionals because it uses the information flow through a system as the basis for partitioning the task into manageable functional units, or modules. It would be interesting to apply Myers' methodology to the national library networking problem and see what system configuration results.

The curriculums of some fields place considerable emphasis on problem-solving skills: computer science, for example. The curriculums of others are heavily structured around the memorization and application of rules: library science, for example, with its concentration on filing, cataloging, and classification rules. Certainly it seems likely that professionals trained in problem-solving techniques as part of their schooling or in-service education will be better equipped for group decision making than those who have not had this opportunity.

A second constructive way of reducing complexity is through information repackaging. Information overload is a real phenomenon. When the volume or the complexity of the information becomes too great, the information will be ignored, filtered, or distorted. People will hear only what they want or expect to hear. They may ignore or reject alternatives out of hand, especially those which would require assimilation of new information to achieve understanding. Information packaging, or repackaging, can be used to reduce complexity and volume. Classification and indexing are classic examples of such techniques, as are summaries, synopses, critical reviews, briefs, digests, abstracts, surveys, analytical reports, and the use of specialist consultants.

The library and information sciences may well be the most important fields missing from Harrison's list of contributing disciplines for integrated decision making. Systematic application of well-known information packaging techniques within the framework of group decision making could substantially improve such processes.

## Responsibilities of Information Managers

Given the importance of information and information resources to the decision-making process and the quality of the resultant decisions, information professionals have a dual responsibility: They must assure that their own decision-making processes are effective, and they must assure that the information resources they manage do enhance and enrich the decision-making processes of their clients. Five sets of recommendations follow for achieving these goals.

1. *Improve group decision-making skills and processes*—Provide training—to students, to employees, to managers, to government representatives—in the group dynamics and problem-solving skills required for effective group decision making. Establish groups only for those types of problems where groups are appropriate; select their membership and limit their size so they can achieve the desired objectives. Obtain input via means other than group membership. Provide staff support for information-related activities (i.e., identify alternatives, compare and evaluate alternatives) where appropriate. Communicate the deliberations of the group to its various constituencies openly and fully, without bias. Explain the advantages and disadvantages of various alternatives objectively. Explain the rationale for the decision and its probable implications and consequences. Solicit acceptance through shared understanding.

2. *Remove barriers to effective group decision making.* Dispassionately examine the policies, procedures, and traditional practices of the department or organization in light of their effects on group decision making; correct or eliminate those which are detrimental. Dispassionately examine the mores, conventions, and norms of the profession in light of their effects as incentives or disincentives for group decision making. Use the influence and prestige of authority figures, professional society officers, journal editors, academic deans, and conference leaders to arouse awareness and institute desired changes.

**It would be interesting to apply Myer's methodology to the national library networking problem and see what system configuration results.**

3. *Broaden the information base used in decision making.* Actively solicit divergent opinion. Admit, indeed seek, outside expertise. Adopt the interdisciplinary task force approach for interdisciplinary problems. Maintain an attitude of openness to new ideas, to new solutions, to unfamiliar alternatives, to criticism. Actively and aggressively look for "satisficing" solutions which accommodate the widest range of objectives.

4. *Design information systems to facilitate decision making.* Rigorously critique manual and automated information systems for utility and effectiveness for decision making. Simplify indexing, classification, and filing systems, where necessary, to make them usable by wider ranges of people. Develop alternate strategies or access routes to the same information resources. Embrace new technologies when they improve the availability or use of information for clients. Eliminate archaic or obsolete practices grounded in outmoded production methods or dated management styles. Shift attention and financial resources to packaging and repackaging information to support decision-making processes. Systematically research alternative methods of reducing information overload; evaluate their effectiveness for group decision making.

5. *Raise the visibility of the library and information sciences as contributing disciplines to the decision sciences.* Encourage and support research into the role of information in decision making. Take an active stance toward the role and responsibilities of information professionals in decision-making processes.

## Conclusion

Having examined Harrison's decision-making process, looked briefly at the decision quality question, surveyed factors affecting group decision making, and enumerated some special responsibilities of information managers, it seems appropriate to summarize the characteristics of effective groups for use in evaluating our own group decision-making processes.

Costello and Zalkind (5, p. 444) characterize effective problem-solving groups as follows: 1) The group's practices and procedures enable it to carry out systematically the steps in the problem-solving (decision-making) process, and its members have skills appropriate to the task. 2) The group members have received training in problem-solving strategies, and their efforts are appropriately motivated. 3) The group has a stable status system, familiar to all its members. 4) The size of the group is large enough to accomplish the task but not so large as to introduce distracting organizational problems. 5) The group is cohesive, interacting cooperatively with members possessing compatible personality characteristics. 6) The group is operating under mild to moderate, but not extreme, stress.

McGregor (9) describes effective groups as follows: 1) The atmosphere tends to be informal, comfortable, relaxed. People are involved and inter-

ested. 2) There is a lot of discussion in which virtually everyone participates, but the discussion remains pertinent to the task. 3) The task or objective is well understood and accepted by the members. There will have been discussion of the objective. 4) The members listen to each other! Every idea is given a hearing. People are not afraid of being foolish by putting forth creative thoughts, even if fairly extreme. 5) There is disagreement, but the group is comfortable with it and shows no signs of having to avoid conflict. Disagreements are not suppressed or overridden by premature group action. The reasons for disagreement are examined, and there is an attempt to resolve them rather than suppress them. Disagreement is treated as an expression of a genuine difference of opinion. 6) Most decisions are reached by some kind of consensus in which there is a general willingness to accept the decision. Formal voting is suspect; the group does not accept a simple majority as a proper basis for action. 7) Criticism is frequent, frank, and relatively comfortable. There is little evidence of personal attack, either openly or in a hidden fashion. Criticism is constructive, oriented toward accomplishing objectives. 8) Members feel free to express their feelings as well as their ideas both on the problem and on the group's operation. There are few 'hidden agendas'. 9) Assignments to members are clear and accepted. 10) The chairman does not dominate. Leadership shifts from time to time among group members as each brings his particular knowledge or experience to bear on the task. There is little evidence of power struggles since the group focuses on getting the job done. 11) The group is self-conscious about its own operation and will frequently stop to examine how it is doing.

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# Decision Support Systems in Libraries

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■ **The use of computers and management science/operations research in libraries is reviewed. The concept of a Decision Support System (DSS) is introduced. DSS can be viewed as a synthesis of the use of computers and quantitative methods to assist librarians in managerial decision-making situations. An example of a DSS application for a medium-sized library is described.**

AS MANAGER, a librarian is responsible for planning, organizing, staffing, coordinating, and controlling the operations of the library. To fulfill these responsibilities, the information manager must tap all available resources.

One primary resource is the computer. Many libraries and information centers are currently developing computer-based information systems to assist the librarian. Another discipline that can contribute considerably to effective library management is Management Science/Operations Research (MS/OR). A concept known as Decision Support Systems—a blending of computer information with decision-making analysis techniques from MS/OR—can lead to more effective decisions by library managers.

## Computer Use in Library Management

Anthony developed an excellent framework for structuring and evaluating the managerial planning and control activities of managers in any organization (*1*). He specified three categories—strategic planning, management control, and operational control—and

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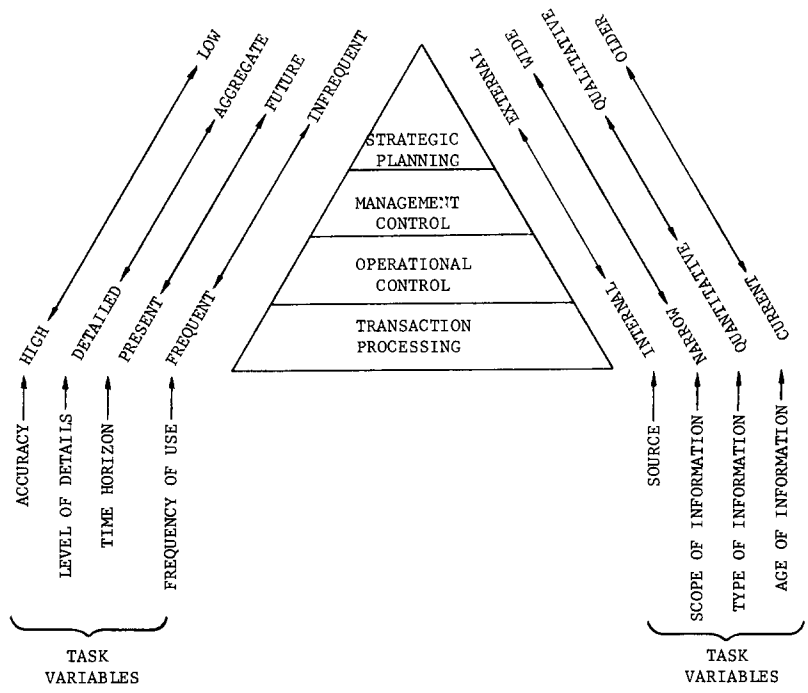
Figure 1. Management Information Characteristics.




argued that each of these levels of managerial activity is sufficiently different in kind to require distinctive planning and control systems.

Figure 1, which is adapted from Davis (2) and Gorry (3), provides a framework for considering the use of computers at various levels of management. Part of this diagram is based on the work done by Anthony.

As can be noted in Figure 1, the characteristics of the information needed at the various levels of management differ considerably. The information system can be viewed as a support tool that binds together the various elements of a library's organization with the library's objective of serving its clientele. The system provides data necessary for the daily operations of a library, as well as for the formulation, validation, and implementation of models (4). The information required for the strategic planning level is less structured, more summarized, less programmable, and more external than the information needed in the other stages (5).

## MS/OR Applications in Libraries

MS/OR models have been designed for use in libraries. However, to date their impact has been minimal. In many cases, the models are too technical for librarians to understand or they require assumptions that are too unrealistic. All too often the library literature is filled with examples of the inability of library managers to use these powerful analytical tools of simulation and optimization.

There are several primary reasons that seem to be preventing operations research from achieving its potential and fulfilling the expectations of its proponents in library management. Bommer describes these reasons as too much mathematics, too little implementation, too little emphasis upon the process of operations research, and too little attention placed on the pressing strategic problems of library managers (6).

The usual excuses for these problems fall into one of two categories: the

manager is not trained or versed in the mathematical formulations of the models, or the manager is not sympathetic to systematic decision making. Many managers fear that they will lose an understanding and sense of reality to "real-world" situations. DeGennero sums it up rather well: "The danger with both kinds of management systems (the quantitative and the behavioral or psychological) is that they offer mechanistic formulas for dealing with complex realities and keep us from thinking about and solving our management problems in practical, realistic, and common sense ways" (*7*). Both sides are never short on words when blaming the other side for failures in using management science techniques.

## DSS

Recently, a new concept for using the computer to help managers in their decision-making activities has evolved. This concept is called Decisions Support Systems (DSS). The emphasis in developing DSS is to examine the actual decision-making process and to develop a system that can assist managers. The emphasis is not on technical factors such as MS/OR models or on computer technology but rather on effectiveness. While efficiency is important, greater priority is placed on effectiveness. In traditional electronic data processing (EDP) applications, the emphasis is on efficiency while MS/OR analysts often develop models with more emphasis on the modeling activities than on the problem at hand. DSS is a blend of EDP and MS/OR.

## Information Systems and DSS for Library Use

In order to gain a better understanding of the role of DSS as a support system within a library context, a framework for library management information systems is presented in Table 1. This model is based on Keen and Morton (*8*) and adapted for library applications. It is examined in three stages: the structured decision stage, the unstructured decision stage, and the semistructured decision stage. DSS can be most effective at the semistructured level. The structured level contains those decisions that do not involve managers, although managers may have input and, in fact, may have designed the system. However, in these situations the decision is well understood and can be handled by clerks or automated through the computer.

Most computer applications of information systems in libraries today are concentrated along the base of a pyramid (Figure 1) and fit neatly into the three-stage structured format. The current emphasis on computerization

Table 1. A Framework for Information Systems in Libraries.

| Type of Operational Activity | Operational Control | Management Control | Strategic Planning | Support Needed |
|---|---|---|---|---|
| Structured | Circulation, inventory control | Optimal allocation of resources in libraries | Location of a new branch library | Clerical, EDP, or MIS models |
| Semistructured | Database literature searching | Setting budget for library system | Justifying resource inputs in terms of resource outputs | DSS |
| Unstructured | Search strategy of reference librarian | Hiring department heads | Shaping the future of libraries | Human intuition |

of circulation, acquisition, and cataloging processes in libraries is actually nothing more than an attempt to build a system to assist librarians and clerks in the transaction processing and operational control stages of the structured management information system. It is basically an inventory control problem. This can readily be seen by the examples used to illustrate the structured level in Table 1.

The top of our framework (Figure 1) contains unstructured decisions which are either not capable of being structured or which have not yet been examined in depth and so appear to the organization as unstructured. It is here that the manager must take active responsibility for identifying appropriate direction for library development and for the vigorous, aggressive pursuit of clearly defined institutional and client interests (*9*). This especially holds true on the strategic planning level. Table 1 shows the typical library situations which arise within this area of management decision making. Notice how the examples reveal the high degree of human involvement needed to understand the subjective variables which play an important role in determining a correct course of action.

The middle level of the framework is of primary concern. For these decisions, managerial judgment alone will not be adequate, perhaps because of the size of the problem or the computational complexity and precision needed to solve it (*8*, p. 89). On the other hand, the model or data alone is also inadequate because the solution involves some judgment and subjective analysis. This is where DSS can bridge the gap between the manager and the problem or decision area.

### *Semistructured Operational Control*

There are many operational control decisions that cannot be automated but for which computer support in the form of information retrieval, analytic models, or data manipulation may be invaluable. The reference librarian's use of any one of the more than 160 available databases to help solve a client's request is a prime example of a support system in a semistructured environment (*10*). This is an instance where no automated system can perform the reference search from the basic inquiry, yet the librarian can quickly and effectively utilize the machine for searching complex databases, analyzing alternatives, and developing rudimentary search strategies.

### *Semistructured Management Control*

An example of the kinds of decisions contained in this cell might be a financial planning system that supports the manager's planning functions. Such a system can explore in detail the implications of inflation rates, trend/cycles, hidden costs, and other probable factors that must be taken into consideration when forming the operating budget. Often these factors are implicit in the manager's own concepts but are difficult to formalize.

### *Semistructured Strategic Planning*

DSS can be used when managerial judgment alone is not adequate and when models or data alone are not sufficient to solve the problem, as, for example, when a library manager needs to justify resource inputs in terms of library outputs (*11*). Using DSS, the effects of different financial strategies and assumptions can be reliably extrapolated, given the manager's judgmental inputs.

## An Operational Model of the Use of DSS for Financial Planning

For library management, the key word is accountability. Organizations expect their libraries to be accountable for the funds they spend and the services they provide (*12*). From the managerial standpoint, those in charge of resources are held responsible for their actions or behavior (*13*). Current public awareness of the costs involved in support of public services

Table 2. Summary Budget Report for a Typical Library.

| | 79 Budget | 79 Est. | 80 Est. | 80 Propsd. | 78 Actual | 78% Diff. | 79 Diff. | 79% Diff. | 80 Diff. | 80% Diff. | 81 Proj. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Salaries | 163864.00 | 145240.00 | 146044.01 | 150304.00 | 140946.00 | −16.26 | 18624.00 | 12.82 | −4259.99 | −2.92 | 168340.48 |
| Total Supplies | 9432.00 | 7897.00 | 8100.00 | 8100.00 | 9068.00 | −4.01 | 1535.00 | 19.44 | .00 | .00 | 9072.00 |
| Total Services | 40372.00 | 43019.00 | 46280.00 | 46280.00 | 38389.00 | −5.17 | −2647.00 | −6.15 | .00 | .00 | 51833.60 |
| Total Capital | 27451.00 | 26339.00 | 26230.00 | 26230.00 | 28279.00 | 2.93 | 1112.00 | 4.22 | .00 | .00 | 29377.60 |
| Total Budget | 241119.00 | 222495.00 | 226654.01 | 230914.00 | 216682.00 | −11.28 | 18624.00 | 8.37 | −4259.99 | −1.88 | 258623.68 |
| Total Salaries Pct. | 67.96 | 65.28 | 64.43 | 65.09 | 65.05 | −4.48 | 2.68 | 4.11 | −.66 | −1.02 | 72.90 |
| Total Services Pct. | 16.74 | 19.33 | 20.42 | 20.04 | 17.72 | 5.49 | −2.59 | −13.40 | .38 | 1.84 | 22.45 |
| Total Supplies Pct. | 3.91 | 3.55 | 3.57 | 3.51 | 4.18 | 6.53 | .36 | 10.21 | .07 | 1.84 | 3.93 |
| Total Capital Pct. | 11.38 | 11.84 | 11.57 | 11.36 | 13.05 | 12.77 | −.45 | −3.83 | .21 | 1.84 | 12.72 |

78% Diff. = (78 actual - 79 budget)/78 actual
79 Diff. = 79 budget − 79 est
79% Diff. = (79 diff/79 est) * 100
80 Diff. = 80 est − 80 proposd
80% Diff. = (80 diff/80 est) * 100
81 Proj. = 80 propsd * 12%

Table 3. Specific Item Budget Report.

| Services | 79 Budget | 79 Est. | 80 Est. | 80 Propsd. | 78 Actual | 78% Diff.* | 79 Diff.* | 79% Diff.* | 80 Diff.* | 80% Diff.* | 81 Proj.* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Building | 2114.00 | 4500.00 | 3000.00 | 3000.00 | 1630.00 | −29.69 | −2386.00 | −53.02 | .00 | .00 | 3360.00 |
| Grounds | 400.00 | 400.00 | 50.00 | 50.00 | 8.00 | −4900.00 | .00 | .00 | .00 | .00 | 56.00 |
| Machines | 1500.00 | 1500.00 | 1500.00 | 1500.00 | 1068.00 | −40.45 | .00 | .00 | .00 | .00 | 1680.00 |
| Rentals | 5698.00 | 4654.00 | 5600.00 | 5600.00 | 4722.00 | −20.67 | 1044.00 | 22.43 | .00 | .00 | 6272.00 |
| Special | 400.00 | 390.00 | 500.00 | 500.00 | 2646.00 | 84.88 | 10.00 | 2.56 | .00 | .00 | 560.00 |
| Periodicals | 5600.00 | 5600.00 | 7000.00 | 7000.00 | 5264.00 | −6.38 | .00 | .00 | .00 | .00 | 7840.00 |
| Laundry | 300.00 | 65.00 | 80.00 | 80.00 | 244.00 | −22.95 | 235.00 | 361.54 | .00 | .00 | 89.60 |
| Travel | 1900.00 | 1900.00 | 1000.00 | 1000.00 | 1521.00 | −24.92 | .00 | .00 | .00 | .00 | 1120.00 |
| Education | .00 | .00 | 300.00 | 300.00 | .00 | .00 | .00 | .00 | .00 | .00 | 336.00 |
| Fuel | 3000.00 | 3000.00 | 3300.00 | 3300.00 | 3092.00 | 2.98 | .00 | .00 | .00 | .00 | 3696.00 |
| Lights | 16000.00 | 17500.00 | 20000.00 | 20000.00 | 15221.00 | −5.12 | −1500.00 | −8.57 | .00 | .00 | 22400.00 |
| Communications | 2860.00 | 3300.00 | 3650.00 | 3650.00 | 2585.00 | −10.64 | −440.00 | −13.33 | .00 | .00 | 4088.00 |
| Dues | 600.00 | 210.00 | 300.00 | 300.00 | 388.00 | −54.64 | 390.00 | 185.71 | .00 | .00 | 336.00 |
| Total Services | 40372.00 | 43019.00 | 46280.00 | 46280.00 | 38389.00 | −5.17 | −2647.00 | −6.15 | .00 | .00 | 51833.60 |
| Total Services Pct. | 16.74 | 19.33 | 20.42 | 20.04 | 17.72 | 5.49 | −2.59 | −13.40 | .38 | 1.84 | 22.45 |

*See footnotes to Table 2.

places an additional burden on the manager.

Galvin succinctly points out that in today's managerial world, the library budget derives from and becomes a vehicle for the implementation of institutional plans and the achievement of service goals (*14*); it is no longer, as in the past, simply a device for obtaining and dispensing the largest possible piece of the institutional, corporate, or government financial pie. Accountability has become an issue that must be dealt with directly in the library manager's decision-making process. DSS can assist managers in the controlling and planning functions associated with budget preparation, resource allocation, overall accountability, and long-range planning.

In order to illustrate the concepts mentioned earlier in the semistructured management control and strategic planning areas, an operational DSS will be described within a library framework. This DSS is based on EXECUCOM's Interactive Financial Planning Systems (IFPS) (*15*). The model itself is based upon a compilation of statistics furnished by a typical medium-sized library. The data from a medium-sized library was used because it bridged the gap between the huge research library and the small special library.

**The library budget is a vehicle for the implementations of plans and the achievement of goals.**

IFPS is a computerized simulation system which enables planning as a natural extension of normal management thought processes. It provides a workable analytical and decision-oriented environment for open and understandable communication (*16*). Within a financial setting, IFPS is designed to make the power of the computer directly available to the nontechnician—the library manager—by using an English-type syntax model (problem) formulation and a set of simple commands to solve the model and generate the results. IFPS allows the user to focus on the problem, not on the solution vehicle (*15*, pp. 1-29).

Table 2 illustrates the summary budget report for a typical library using figures for 1978 through 1980. An attempt was made to show the versaility and ease of use of this system by extending the original five columns of data to eleven columns, the last six representing statistical manipulations of the data. The eight rows containing the percentage figures for each major budget category are also evidence of the system's capability to perform simple and complex calculations in a matter of seconds.

Table 3 is a closer look at just one of the four major budget categories. It reveals the items involved under the heading "Services," and shows once again some fairly straightforward data manipulation. Both Tables 2 and 3 are based upon a one-time initial input of the data contained in the actual, estimated, and proposed budget for 1978, 1979, and 1980. The development of the IFPS program took less than two hours and includes all requests for percentages and differences in the budgets between the three years. Within seconds, the computer can complete all calculations, and the printer can begin to produce the hardcopy version of the reports. A listing of the IFPS program for the basic model used in Tables 2 and 3 is illustrated in Table 4.

As a decision support tool for library managers, IFPS makes modifications and/or interrogation of the model easily; thus, changes in assumptions or data take only a matter of minutes for conceptualization to implementation and report generation. For example, the projected budget figures for 1981 in Tables 2 and 3 are based on a 12% inflation factor over 1980's figures. A simple command could raise or lower this inflation factor in order to test its effects on the budget items in times of

Table 4. Basic Model Listing.

```
MODEL ORANGE  VERSION OF  06/13/81  23:02
10 * ORANGE SPECIAL LIBRARY
15*   BUDGET REPORT
20 *
21*
22* 78%DIFF = (78ACTUAL - 79BUDGET) /78ACTUAL
23* 79DIFF = 79BUDGET - 79EST
24* 79%DIFF = (79DIFF / 79EST) * 100
25 * 80DIFF = 80EST - 80PROPOSD
26* 80%DIFF = (80DIFF / 80EST) * 100
27* 81PROJ = 80PROPSD * 12%
28*
29*
30 COLUMNS 79BUDGET,79EST,80EST,80PROPSD,78ACTUAL,78%DIFF,79DIFF'
35 79%DIFF,80DIFF,80%DIFF,81PROJ
40**PERSONAL SERVICES
45 SALARIES = 134302, 116740, 146044, 138215, 117013
50 TEMP HELP = 0, 930, 0, 0, 0
55 CETA HELP = 13376, 17730, 0.01, 12089, 17196
60 AR HELP = 16186, 9740, 0, 0, 6701
65 OVERTIME = 0, 100, 0, 0, 36
70 TOTAL SALARIES = SALARIES+TEMP HELP+CETA HELP+AR HELP+OVERTIME
75**SUPPLIES
80 OFFICE = 5882, 5882, 5800, 5800, 5794
85 FOOD = 100, 100, 100, 100, 69
90 TOOLS = 400, 400, 400, 400, 387
95 CLEANING = 900, 900, 1200, 1200, 761
100 EDUCATIONAL = 900, 500, 600, 600, 807
105 PRINTING = 1250, 115, 0, 0, 1250
110 TOTAL SUPPLIES=OFFICE+FOOD+TOOLS+CLEANING+EDUCATIONAL+PRINTING
115 *SERVICES
120 BUILDING = 2114, 4500, 3000, 3000, 1630
125 GROUNDS = 400, 400, 50, 50, 8
130 MACHINES = 1500, 1500, 1500, 1500, 1068
135 RENTALS = 5698, 4654, 5600, 5600, 4722
140 SPECIAL =  400, 390, 500, 500, 2646
145 PERIODICALS = 5600, 5600, 7000, 7000, 5264
150 LAUNDRY = 300, 65, 80, 80, 244
155 TRAVEL= 1900, 1900, 1000, 1000, 1521
160 EDUCATION = 0, 0, 300, 300, 0
165 FUEL = 3000, 3000, 3300, 3300, 3092
170 LIGHTS = 16000, 17500, 20000, 20000, 15221
171 COMMUNICATIONS = 2860, 3300, 3650, 3650, 2585
180 DUES = 600, 210, 300, 300, 388
185 TOTAL SERVICES = SUM(BUILDING THRU DUES)
190 *CAPITAL OUTLAY
195 FURNITURE = 1744, 632, 0, 0, 3268
200 EQUIPMENT = 707, 707, 1230, 1230, 11
205 BOOKS = 25000, 25000, 25000, 25000, 25000
210 TOTAL CAPITAL = FURNITURE + EQUIPMENT + BOOKS
215 *
220 *TOTAL BUDGET COSTS
225 *
230 TOTAL BUDGET = TOTAL SALARIES+TOTAL SUPPLIES+TOTAL SERVICES+TOTAL CAPITAL
235 *
240 *ITEM PERCENTAGES
255 TOTAL SALARIES PCT = TOTAL SALARIES/TOTAL BUDGET * 100
265 TOTAL SERVICES PCT = TOTAL SERVICES/TOTAL BUDGET*100
270 TOTAL SUPPLIES PCT = TOTAL SUPPLIES/TOTAL BUDGET*100
275 TOTAL CAPITAL PCT = TOTAL CAPITAL/TOTAL BUDGET*100
280 COLUMN 6 = ((COLUMN 5 - COLUMN 1)/COLUMN 5) * 100
285 COLUMN 7 = COLUMN 1 - COLUMN 2
290 COLUMN 8 = (COLUMN 7/COLUMN 2)*100
295 COLUMN 9 = COLUMN 3 - COLUMN 4
300 COLUMN 10 = (COLUMN 9/COLUMN 3)*100
305 COLUMN 11 = (COLUMN 4) * 1.12
END OF MODEL
?
```

future uncertainty. Command results are almost instantaneous, with the derivation of new estimates based on the new data inputs.

In another situation a library manager may need to determine how much to budget for temporary help if the total salaries cannot equal more than 65% of the budget, all other things remaining constant. Through the use of the powerful "Goal Seeking" command, the answers appear within seconds, allowing the manager to make valid decisions rather than performing time-consuming calculations or relying on estimates.

Other typical IFPS applications for library managers include operating budgets, cash budgets (cash flow projections), lease or purchase decisions, various strategic planning cases, library expansion analysis, project selection, capital budgeting, risk analysis, and discounted cash flow analysis. Highlights of this particular system can reveal the general usefulness of DSS in the semistructured environment of the library manager:

- A special "what if" capability for testing alternatives and sensitivity analysis is available for the manager. For example, what happens to the budget totals and percentages if utility bills increase dramatically because of energy embargos by foreign countries in the next 18 months?
- Consolidation features are available for budgeting applications. If a library system has several branches, each unit could produce a budget as illustrated in Tables 2 and 3. They could then be consolidated into one master budget by the use of a simple command to the computer.
- As stated previously, the problem to be solved is formulated in English-like statements. The manager can directly use the system without going through an intermediary language. Our example using the statistics from a typical library took less than 70 statements or sentences and did not require a knowledge of COBOL, FORTRAN, or other languages (Table 4).
- Built-in financial analysis capabilities include present value, internal rate of return, depreciation, and amortization. Although not illustrated in this paper, simple commands produce these results.
- The user has the choice of editing his own reports and of obtaining either complete reports or just the values for selected items. Both Tables 2 and 3 are edited reports based upon the same model.

IFPS is one example of several DSS available (*17*). Nevertheless, it is capable of reducing a complex budgeting problem into a simple solution by a computer. Koenig illustrates a simple problem in present value calculations to determine the acceptability of a new computer-assisted cataloging system (*18*). By using DSS, this kind of problem solving becomes routine and versatile. The information gained from the data manipulation supports the manager who must make the decision.

## Conclusion

Although libraries appear to be inexorably bound to the transaction processing level in the management information system through their current computerization attempts, the times are swiftly changing. It is not prophetic to say that library management will change. It is already happening. Operations research has been applied to the library's problems for over a decade (*19*). Library schools are now reaching beyond the traditional subject areas to prepare tomorrow's librarians for the roles they will assume as managers of libraries (*20*). Systems are being designed, tested, developed, and implemented to provide for more than just processing day-to-day transactions on the clerical level (*21*).

In the continual evolution of man's use of machines, it appears that DSS are the next step—a half-step, really, bridging that gap between the analytical and

the heuristic. It places the powerful tools of the computer specialist in the hands of the manager, to be used not as a recall device but as a support system. Future applications can open new doors for librarians who cross into the world of library management.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# Selling the Business Library

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■ **In today's cost-conscious economy, it is imperative that the special library has a well-defined public relations program. Public relations activities and problems of the special library in a business environment are considered. The audiences served are identified, and some of the active means by which business libraries can successfully sell their services are outlined.**

LIKE the weather, public relations gets talked about a lot. One of the greatest obstacles to implementing an effective public relations program is coming to grips with what public relations really means. Every organization has a public relations program, whether it is recognized or not. It is the organization's total communications effort. Basically, public relations is simply a matter of doing good and telling about it.

Today's corporate library is really a small business within a large business. Since this concept can result in misunderstandings of the library function by the parent organization, it is incumbent upon the small business operator (the librarian) to translate the operations of his concern to overall corporate goals.

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Traditionally, public relations in the corporate library has been a way of thinking translated into action: The best public relations is a job well done. This concept flourished in the early years of the business library and continues today in a completely different environment—one in which the library staff is competing for the corporate dollar and trying to justify collection and staff expansion, if not the library's very existence.

It is time to forsake the cliché that, insofar as the business library is concerned, good public relations is a job well done. Admittedly, a good professional performance is an indication of a good public relations program. However, the "good job" may be known and recognized by only a few hard-core users who are aware of the services provided and have benefitted from the job well done. Business librarians must broaden their horizons and actively sell themselves and their services.

## The Public Relations Program Defined

In today's era of the hard sell, business librarians must be armed with the tools of an effective public relations program to efficiently market the services of the library to its public. If the library is viewed as a vital part of the parent organization's operation, it will be in a better position to justify its programs and policies. If libraries are considered luxuries or extravagancies by some corporate managements, the selling job has not been done.

The obvious reason for the company library to develop a formal public relations program is to improve the satisfaction of its clientele. Everyone is aware of the potential patron problem: a tendency on the part of users not to ask questions or request assistance, even when they know it is available. It may be that the reference librarian looks unapproachable or disinterested. Then, too, most people don't like to ask for help, and particularly help from strangers.

If an effective public relations program is implemented, the apprehensions of potential users can be dispelled. The public relations effort can make significant advances in reaching potential users who need the information librarians can supply but are not willing or able to ask for help, and, consequently, are not being satisfied.

The second reason for a formal public relations program is the trend toward financial accountability in today's high inflation economy. The best defense against budget cuts is to become an indispensable source of services and information and to convince management that the library is indispensable.

An effective public relations program produces a cycle effect: the library reaches more potential users, encourages use of its resources, becomes an indispensable part of the total organization, and thereby, is in a position to increase its resources and services and better satisfy its growing clientele.

The library will quickly lose its effectiveness, and perhaps even its budget, if the public relations efforts do not receive emphasis in a clearly defined and implemented program. Identifying goals is the first step in the program, and this involves identifying the public being served and targeted for public relations activities. Once this audience has been identified, priorities can be set, overall creative strategies can be developed, and the program can be activated.

Setting specific goals goes hand in hand with a written plan. A written plan gives control; it indicates what will be done and when, and equally important, what won't be done. A planned program with realistic, concrete goals helps identify public relations objectives to be achieved in terms of activities; what kind and how many newsletters, house organ articles, current awareness services, management meetings, open houses, or public service announcements.

The plan should also state objectives or goals in terms of the actions the clientele might be expected to undertake: increase the budget, use the services more, become public relations advocates for the library, and so on.

## Management and Its Public

Any library, regardless of size and situation, has several distinct user groups it must serve, and the nature of these users determines public relations policies and activities.

In the business environment, it is of utmost importance that the library be guided in its overall functions by the objectives and goals of the organization in which it is located. Librarians should consider themselves an integral part of the management team and support the planning and decision-making process of the parent organization. If management places the library relatively low in the organizational chart, the librarian has a difficult selling job. Ultimately, the place of the library in the total organization is determined by the quality of its services and programs and by how well they are known.

Within the chain of command, the librarian reports to a designated officer who is the link to top management. This officer should be the primary object of the management-oriented public relations program, the first line of communication, and the first subject of any information program.

According to Elizabeth Ferguson, "the fate of the library literally depends on effective communication between the librarian and the officer, and the burden of initiating and maintaining the interchange falls squarely on the shoulders of the librarian" (*1*). Ongoing, two-way communication with an immediate supervisor opens doors to other corporate executives in the management hierachy.

The foremost method of keeping the officer informed is a regular schedule of face-to-face meetings, supplemented by frequent memos and periodic written reports, which take stock and review progress and activities over the previous month or previous quarter.

The periodic report to an immediate supervisor provides the basis for an annual report to top management and the user public. An interesting and readable annual report is an excellent vehicle to convey the library story to management. It is an ideal public relations medium for key corporate executives who are used to dealing with facts and figures and the concept of an annual statement of accountability. Whether or not it is requested or circulated to management, it should be prepared. It is a factual record of accomplishment that has archival significance. It offers an opportunity to review goals and objectives, evaluate the current status of programs and services, and plan for the future.

The periodic report should contain statistics: staff size, budget commitments, circulation figures, in-house use, searches completed, interlibrary loans, and so forth. Additionally, it should contain details of the collection (books acquired and books disposed of), new services available, outstanding or unusual searches completed or questions answered, writings or publications produced, special assignments undertaken, staff accomplishments, and so on. All of these activities should be related to the overall corporate objectives.

**In the business environment, it is of utmost importance that the library be guided in its overall functions by the objectives and goals of the organization in which it is located. Librarians should consider themselves an integral part of the management team and support the planning and decision-making process of the parent organization.**

The format for an annual report will be guided by budgetary constraints. It may be a slickly produced piece, in color and with illustrations and photographs, or it may be a simple photo offset job, reproduced from typed copy. In whatever format it is presented, it should be attractive and stimulating, with an interesting cover, creative layout, some graphics, and above all, clear and concise writing.

Another vehicle to sell management on the business library is to accept a variety of possible assignments in the organization. The opportunity for additional management-level involvement increases proportionately with the extent of rapport with and cooperation and support from the librarian's immediate supervisor. Special assignments might include working on management

and research committees; participation in organizational future planning sessions; cooperation in developing company educational programs; providing material for corporate sales, advertising, and public relations packages; organizing an archival collection; and issuing regular intelligence reports or news summaries. Of course, the extent of these additional management services hinges on staff size and competence and the time element involved in task completion of projects not directly connected with the library's ultimate reason for existence: service to users.

The business librarian must plan ahead and be alert to change within and without the organization. Strable points out that the librarian "can do much to encourage management to keep him informed by following up on any clues afforded by new material being requested, articles that users are borrowing or having clipped, or by speeches given by users that reflect a new field of interest" (2).

One often overlooked link in the library's communication program with management is the executive secretarial staff. The executive secretaries and administrative assistants can be a vital part of the library's public relations program, and one of the staff's best allies. They should be carefully cultivated and oriented to the services and program of the library, perhaps with a periodic tour, occasional memos of the "to keep you informed" variety, and thank you notes for special services provided.

With an aggressive information program, the immediate supervisor and ultimately the rest of top management will be receptive to the new and imaginative ideas promoted and the creative leadership displayed by the business librarian who then becomes more than a custodian of the collection.

By serving as a public relations tool for management's public, the corporate library can enhance its own image. The library staff must be prepared to put on a "dog-and-pony show" for visiting dignitaries, clients, potential clients and employees, outside members of the board of directors, stockholders, and others.

Atmosphere plays an important role in the library's "showcase" function and applies to the user clientele as well as to management's public. The goal is to make the library a pleasant place to visit and spend time in. Even if the library is not ideally located, other compensating elements can be introduced: good lighting and ventilation; efficiently placed study tables or carrels; easily accessed materials and equipment; and a courteous, pleasant, and well-informed library staff.

**The staff is a key factor in the library's relationships with its public. The staff is both a public relations tool and a public to be served. If it is not adequately served as a public, it can hardly be expected to function as a tool.**

It is important to provide an attractive setting for the occasional V.I.P. visitor, as well as a comfortable place, conducive to study, for the repeat customer. If the setting is cold and uninspiring, users will not want to spend much time there.

### The Library Staff

The staff is a key factor in the library's relationships with its public. The staff is both a public relations tool and a public to be served. If it is not adequately served as a public, it can hardly be expected to function as a tool.

In choosing staff members, it is the librarian's assignment to find persons with enthusiasm, initiative, and inquiring minds, who are informed and well-trained for the position they will hold. Staff members must be encouraged in their job assignments so that the

library's goals and the parent organization's objectives become their own.

It is vital to the total effort that the staff be continuously informed as to important management policies and decisions, as well as library plans and activities. The exchange of information can take many forms: staff meetings, bulletin boards, memos, suggestion boxes, organizational manuals, and so on. Additionally, constant input from staff members should be invited in the planning and development of programs and activities. Suggestions, participation, and evaluation should be part of any intra-library communications program.

## The User Public

Everyone in the organization, from the chairman of the board on down, is a potential client of the business library. But, as Rathbun asks, "How do you get them to come into the library?" (3). Even more importantly, how do you get them to become frequent users?

Personal contact is an effective method of selling the library's services. This can involve getting library staff out of the library and into meetings with employees, both individually and in groups. New personnel in the organization should be welcomed with personal visits, informational materials about the library, and an invitation to visit. Particular reader interests should be ascertained, and a special effort should be made to provide a pertinent current awareness item as quickly as possible after the initial contact. Service is the word! Mitchell points out how important it is to assist management trainees and maintain contacts with them as they move up the corporate ladder. "There is nothing like starting in on the ground floor," she emphasizes (4).

Talking with employee groups is another means of personally reaching old and new employees. If the group can be brought together in the library, there is a distinct advantage: an orientation tour can be provided and individual, first-hand browsing can be encouraged. As indicated earlier, it is important that the library have a comfortable, welcoming atmosphere, that invites use. That welcoming atmosphere can be used effectively to stimulate potential users on an orientation tour.

Publicity is a technique of public relations that can be used in many forms in reaching the user public. Organizations large enough to support business libraries usually publish a variety of house organs, whose editors are constantly in need of interesting, newsy items. The library could supply articles or news items on such subjects as unusual acquisitions, lists of new books, book reviews, historical items about the company, graphic statistics, new programs or services, personal news about library staff members, or perhaps a regular library column incorporating all of the above might be appropriate.

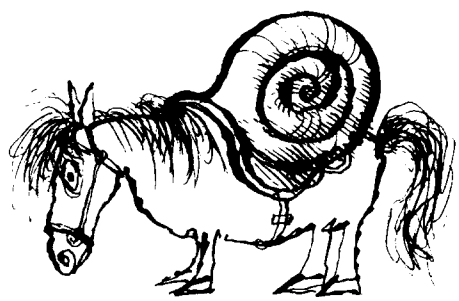
The library could post news items, acquisition lists, or book jackets on the company bulletin board. The official employee handbook should contain information about the library. Additionally, new employees should be furnished with an attractive brochure, describing the library's services, collection, operating procedures and practices, and introducing staff members. Depending on its budget, the library can produce audiovisual presentations of its operations; run annual open houses; and provide enclosures for inter-company bulletins, such as calendars of upcoming meetings, bookmarks, "did you know" flyers, and so on. The range of publicity opportunities is as wide as the creative genius of a librarian and an enthusiastic staff. What is needed is a regular reminder to the organization that the library is there!

After users have been identified and attracted to the library, another phase of the selling job comes into play: keeping them interested users. Caring about the clients and communicating with them in various ways can make a great difference and is a simple way to guard against making them non-users.

> Responsiveness to user's needs or at least considering these needs is a major part of any library's service, and identifying and publicizing any answers to the needs is part of library public relations. Communication between the library and patrons concerning patron needs is the most basic part of the library's public relations program. When no interest is shown in patron needs, it follows there is no public relations program—other than a negative one—and it is only to be expected that non-users will not become users and the reverse can happen (5).

Within the library, the bulletin board should have a prominent position, near the door or information counter. It should provide an attractive focal point to keep timely information before the personnel of the organization. Timeliness is the keyword: new acquisition lists, forthcoming calendar of events, news clippings about the organization or its competitors, clippings about organization personnel, historical notes about the company, book jackets of new acquisitions, cartoons, company news releases, photographs, and other attention-grabbers. The dynamic bulletin board can invite and encourage users. It can say, "This is an exciting place. We warmly welcome you and invite you to use our services; ask your questions. We stand ready to serve."

In addition to the bulletin board, a special area should be reserved for exhibits: new acquisitions, perhaps some newly discovered company archival material, recent company sales promotional materials, a model of a new product or the new product itself, and so on.



Here again, the exhibits must be timely and frequently changed to be effective as "people-stoppers" and "people-movers." Imagination and creativity come to the forefront in developing exciting exhibits.

## Library Publications

The need for up-to-date information in the business community is paramount. Corporate personnel rely on a great deal of nonbook materials to keep current in their specialties. Newspapers, periodicals, loose-leaf services, bank reports and newsletters, and government publications comprise a great portion of the business library collection. Additionally, computerized information services are receiving greater emphasis. The corporate executive needs to know about trends and activities, not only in his particular industry, but in all areas of business. He or she needs to know about the social, political, economic, and technological developments in today's changing business environment.

It is up to the business librarian to serve the needs of this particular clientele, by making known the availability of appropriate materials and information as soon as it is received. The librarian should quickly connect the user with the required information, so as to minimize time loss and time waste. In order to expedite dissemination of information, business libraries must get into the publishing industry in one form or another.

A top priority publication in any business library is a guide, or manual, or handbook. This basic publication may only be a general information sheet or general purpose brochure, or it may be a more elaborate, more detailed piece.

The single sheet information bulletin should contain such information as borrower qualifications and privileges, circulation periods, penalties, hours of service, staff, telephone numbers, areas of service, and so on. A general purpose brochure would include all of the above

information, as well as details about the history of the library in the corporation, some information about the parent organization, the collection, special programs or activities presented, and present and future objectives and goals. The brochure can be distributed to new employees and library visitors, as well as circulated outside of the corporation.

Depending on the size and services of the library, a more detailed user's manual may be required. The more comprehensive guide would include an outline of the library's objectives, linking library goals to corporate goals and indicating the library's place in the corporate hierarchy. It explains library facilities, resources, services, and how to use them. It may include an explanatory map, taking the user on a library tour. It includes rules and regulations, hours, staff, telephone numbers, and specific policies and guidelines. The library guide also describes the general communications program, publications produced, and special services such as selective dissemination of information (SDI). Overall, the guide provides complete information and instruction.

**In order to expedite dissemination of information, business libraries must get into the publishing industry in one form or another.**

Accession lists, periodical title lists, abstracts, and bibliographies are some of the methods that may be used to disseminate current information. The accession list is frequently the first venture into the publishing field. Such a list is easy to prepare, with straightforward information, often typed from a set of cards which becomes part of the library catalog. This type of list can be arranged in alphabetical order, but a classified scheme is preferred. Usually there are no annotations. The function of an accession list is to make known to the library clientele the new material acquired.

Periodical title lists are similar in format to the accession lists, citing articles of current interest and usefulness to the clientele. Titles are arranged in classified, or near-classified, order with no annotations in the interest of saving time and space. This style of list is selective, in contrast to the more general contents list. There is no reason why the periodical title list should be limited to articles in periodicals and newspapers. Titles of reports, dissertations, and other manuscripts may also be included, as well as patent lists or reports.

Contents lists are compiled by producing masters of a standard size from the table of contents pages of journals, reproducing a number of copies, and collating them into a bulletin with an appropriate cover. The contents pages can be arranged in alphabetical order by name of journal, by broad subject groupings, or in random order (industry importance, date of publication, date of receipt, and so forth). Users can be instructed to order specific periodicals or articles via an accompanying reservation form. Because of their broad coverage, contents lists are of limited value, particularly since titles can be misleading indicators of subject matter. With the periodical title lists, there is at least a preliminary screening of subject matter. However, both of these lists are good devices for current awareness.

The natural extension of the foregoing is the abstract bulletin. While there are any number of commercial abstracting services providing the same materials, the principal advantage of an in-house abstracting service lies in its timeliness. For easy access to information, a subject arrangement should be employed. Normally, the material abstracted will be from the library's collection of periodicals, journals, and reports.

Of all library publications, an annotated subject bibliography is probably the most professionally fulfilling and the most time-consuming assignment.

The subject bibliography may result from a user request for information, or it may evolve as a natural function of the library staff's attempt to provide continuing service to users. The subject bibliography, which may in fact be a state-of-the-art bulletin, requires the services of someone familiar with the field, its literature and terminology. It is a professional challenge for the true reference librarian or subject specialist. It can be a very specialized, individualized service for a single user.

Library bulletins can have many purposes and take many forms. A daily or weekly news bulletin summarizes current economic or business news of significance to the parent organization. The bulletin can consist of brief news clippings, mounted in page form and duplicated by one of the conventional copying processes, or it can consist of typed copy reproduced by the same process. The main element with a news bulletin is speed and timeliness. If issued daily, it should be on the client's desk before noon; if weekly, the compilation of news items should be available before noon on Friday.

coming conferences or symposia being conducted by outside groups, and items about library staff members.

The internal library bulletin can be extended into an external public relations tool, with a controlled outside circulation, or on a subscription basis.

## Graphics and Budgets

It is important that all library publications, regardless of purpose, format, or content, project an image consistent with the type and degree of service the library purports to provide. Logos, letterheads, flyers, covers, and inside layouts play a vital part in the image a library projects. The prime purpose of informational bulletins or abstract services is to provide the user with information. However, the appearance, design, format, and color of a bulletin or brochure may be what attracts the person to pick it up, read it, retain the information, and act upon it.

The logo or cover of a publication is responsible for the initial impact. If the logo or cover is not arresting or attractive, the publication may go unheeded among the mass of papers received daily, thereby defeating the prime purpose. Imagination and creativity can be employed in producing an eye-catching bulletin, even if financial funds are limited. Good graphics attract the reader/user and good writing keeps his interest and attention. Clear and concise writing, combined in an informal style, can make even the most technical material readable.

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A more extensive library bulletin can be issued on a monthly basis, or more frequently if the budget permits. The library bulletin can combine elements of the bibliographic bulletins with general news of the library and the parent organization. Written in a narrative, newsy style, the bulletin can contain state-of-the-art surveys, special treatment of subjects in successive issues, book reviews, critical reviews of report literature, features on unusual acquisitions or literature searches, calendars of events within the library and the parent organization, news of forth-

The number, style, frequency, and circulation of library publications are closely tied to budgetary considerations. In a tight budget situation,

elements of various publication services can be combined into one newsletter or bulletin, or the frequency of appearance can be curtailed. A more expansive budget situation can lead to an even wider range of publications, with more and better graphics, colored illustrations and photographs, and so on.

As to staff, the almost constant complaint is that there is not enough time to provide all of these "extraneous" services. It may well be that the business librarian voicing these complaints has a few misplaced priorities. Until you get clients to use the material, the biggest and best cataloged collection in the world is unproductive, if not worthless. If the users come in greater numbers and increased services are provided, the library becomes an indispensable part of the total organization and requests for increased budgets and additional personnel are easier to obtain.

## External Relations

The business library's public relations does not end at the outer boundaries of the parent corporation. The library and the librarian have commitments to build good will outside the organization. The outside public is comprised of the professional community and the community-at-large.

The exchange of information among special librarians has an informal, person-to-person quality that makes it an extended arm of the in-house reference service. Information or items can be obtained by telephone, visit, messenger, or mail.

The business librarian makes interlibrary loans and networking a part of the public relations program. The extension of service is reciprocal. As part of the public relations program, individual libraries are never overimposed upon, and all compliances with loan requests call for an immediate note of appreciation and an offer of assistance in the future.

The staffs of business libraries should be encouraged to join and participate in professional organizations for both professional and public relations purposes. Shared experiences and interchange of information are learning experiences designed to enhance the value of the librarian's commitment and contribution to the parent organization. The same is true of continuing education of reading, formal education, and registering in seminars or workshops of a professional nature or in the field that the organization represents.

**The exchange of information among special librarians has an informal, person-to-person quality that makes it an extended arm of the in-house reference service.**

Business librarians also have a public relations role to play in the community-at-large by participating in civic organizations and functions. Since librarians are an educational resource, they can become a network of referral and exchange information in their communities.

As more corporations become public relations-oriented and conscious of their social responsibility, their library collections are being made available to people outside of the organization on some kind of limited access basis. It can be anticipated that this type of community service will grow, particularly in smaller communities where students are sometimes restricted in the materials available to them in a local, small library.

## Conclusion

Drake points out that the survival of large libraries in their present form "is very much in doubt. Few organizations can outlast protracted conflicts with funders, managers, staff, and clientele" (*6*).

The same might be said of the business library in an age of frequent busi-

ness mergers, management realignments, cost reduction measures, and reevaluation of all corporate activities and services. An assertive librarian—one who promotes the library effectively, outlines a definitive public relations program for the library, and masters the various public relations techniques and implements them in contacts with the library's public—is a critical factor in the success of the business library.

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# Electronic Mail Has a Future in the Library

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■ **In 1982 the United States Postal Service will begin the first part of a three-phase plan to offer Americans electronic delivery of mail. The important potential this development has for libraries is discussed. Documents can be sent via electronic mail as facsimile messages or displayed on the library C.R.T. Interlibrary loans in the future could be accomplished within minutes using a special library electronic mail system.**

Electronic mail systems will provide an exciting and perhaps revolutionary opportunity to improve library services in the near future. New technology and the promise of regulatory change have created a potential for the instantaneous transmission of written messages and document delivery systems for interlibrary loan and other services anywhere in the world.

Many powerful organizations, including AT&T, Western Union, Exxon, Satellite Business Systems (SBS) which is owned by IBM, COMSAT, Aetna Life & Casualty, and the United States Postal Service (USPS), have positioned themselves to offer large-scale electronic message services directly to the public. Information managers should, therefore, examine the various alternative systems and consider the numerous implications electronic mail systems will have for libraries and information services.

The Federal Communication Commission defines electronic mail as "the sending and receiving of messages which otherwise would be done via the Postal Service or the telephone" (*1*). The idea of electronic delivery of information is not a new concept. The first primitive example was the telegraph. A world-wide electronic message service which has been in use over a century is the telephone. Today, according to Don Avedon, Executive Director, International Micrographic Congress (IMC), "close to one third of the Fortune 500 companies and many government agencies use some kind of electronic mail system" (*2*).

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Technology has played an important role in this current surge of interest in electronic mail, but scientific advances have not been the dominant factor. The ability to send electronic transmissions of mail has been available for many years. Xerox introduced the Telecopier 400, the first U.S. commercial facsimile copier 20 years ago. This unit permitted a page of information to be electronically transmitted across the country to a receiving machine where a faithful reproduction of the original was produced. Early analog machines of this type, called "fax" printers, were slow, taking several minutes to transmit a standard A-4 size page which is 210 × 297 mm—or $8\frac{1}{4}$ in. by $11\frac{11}{16}$ in. The development of the faster digital telefacsimile machines has shortened this time considerably, and transmission of one or two pages per minute is now common. Research by the USPS in collaboration with Western Union to make electronic mail more economical has led to a new generation of digital non-impact "fax" printers called "Group 3." These super fast printers will enable the transmission of ten A-4 pages per second.

The primary reason why companies and governmental agencies are using electronic mail, and why librarians should be, is that information has itself become more valuable.

In response to the increasing demand for reliable, current information, many types of electronic distribution processes have already been developed. Databases, bibliographic utilities, and online catalog systems are nearly commonplace in libraries and businesses.

Major corporations including Exxon, Xerox, and AT&T have begun to develop methods to enable people to obtain information more quickly. One of these systems can collectively be called electronic mail. There are many variations of how each prototype works, but the concepts are basically similar. The electronic mail systems provide a means of sending and receiving computerized data. The different vehicles proposed for the transmission of large-scale public messages are telephone lines, trunk lines, conventional radiowaves, microwave transmissions from rooftop antennas, and satellites.

Implementation of public message delivery systems in the United States is restricted by government regulation, and the exact roles of private enterprise, USPS, and the Federal Communication Commission are still being hotly debated. The stakes are high and billions of dollars may be involved. The U.S. Post Office is fighting to retain its exclusive monopoly over the delivery of First Class Mail granted under the Private Express Statutes. According to a report of the National Research Council, USPS needs to get into the electronic mail delivery system or "the future of the Post Office is dim" (3). Recommendations of this sort gave USPS impetus to research the use of electronic mail.

Postal officials quickly dismissed the possibility of home or point to point electronic delivery systems as undesirable and technologically several decades down the road. Many competitors disagree with this philosophy and argue that labor, which accounts for 86% of the cost of mail, is causing the Postal Service to drag its heels because the point to point system would eliminate too many jobs.

## ECOM

The USPS' entrant into electronic mail will be called Electronic Computer Originated Mail (ECOM) System. The transition to an electronic mail system will be gradual and consist of three phases, as suggested by the National Research Council (4).

### *Generation I*

This phase marks the initial entrance of the USPS into the communications marketplace. Electronic transmissions will be limited to exchanges of mail among computers of major U.S. Post Offices. The facsimile copy of the original letter would still need to be deliv-

ered by letter carrier. As Generation I usage increases and more postal computers are interconnected as part of a national network, Generation II of ECOM will follow.

### *Generation II*

Generation II will permit the direct computer-to-computer link between major organizations and the U.S. Post Office. Letters would be entered via computer, and automatically transmitted by the USPS where a facsimile copy would be delivered by carrier.

### *Generation III*

Generation III is a point to point system. This is quite different from the earlier stage of electronic mail. Generation III capability would eliminate the need to produce a paper facsimile document. The system would enable a totally computer-to-computer transmission and response to any home or business within seconds. Messages would be stored in a computer memory and recalled on a screen upon demand. If desired, the recipient may have a hard-copy printed. Under the Generation III system, there would be little dependence on letter carriers or paper.

USPS first claimed that under the Generation I system electronically transmitted mail would arrive by the following day, but now Post Master General William Bolger is predicting that delivery would probably be within two days after the item was received for processing (*5*).

Present plans for ECOM are limited to the implementation of Generation I. However, many companies already see a need for local computer input and an electronic point to point delivery system.

There is a real need for electronic mail service. During a recent congressional hearing, Bolger stated that the Post Office "stood to lose 80% of its First Class mail within two years," if it were not granted exclusive rights to electronic mail delivery in the United States (*6*).

Western Union estimates the market for electronic mail is four billion pieces of business-to-business mail and six billion in the business-to-household mail per year, assuming the system were connected to the 100 largest metropolitan areas (*7*).

The USPS electronic mail project received a tentative go-ahead from the Postal Rate Commission, and ECOM service is scheduled to begin January 1982. Organizations which send out 200 or more messages at one time will pay 26¢ for the first page and 5¢ for each additional page mailed. An additional 2¢ will go to the communication companies working with the USPS to transmit the mail between post offices (*8*). Bolger wants ECOM labeled as an experimental service with only 25 branch offices involved. The Postal Rate Commission, however, wants to see ECOM as a permanent service, representing a commitment to electronic mail right from the start.

USPS will not be able to stop its regular letter service; instead, it will have to provide both message delivery systems. Since USPS uses First Class mail to help pay for its other services, an increase in rates for the other classes of mail seems unavoidable. To the librarian and publisher this means

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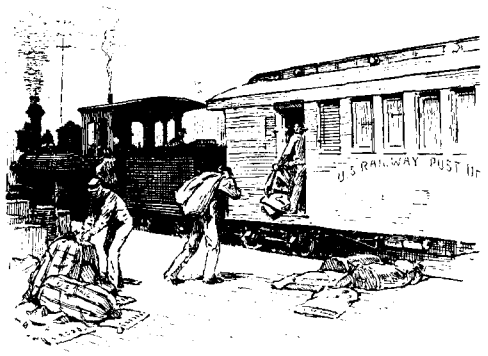
higher costs for the shipment of books and magazines when budgets are already tight.

The Association of American Publishers testified before the National Telecommunications and Information Administration that USPS should be allowed to provide electronic message service and that such service should be offered only at rates which will make a reasonable contribution to the overall costs of USPS (*9*). Indications are that the projected expenses for electronic mail have been raised to help pay for other types of mail services. In congressional hearings, the Post Office testified that its costs for electronic mail would be 1.8¢, plus local carrier's delivery charge, plus the cost of paper (*10*). It felt that the biggest part of the charge would result from the cost of paper in which the facsimile message is printed. Bolger has yet to justify this difference in cost in lieu of his commitment not to make a profit from ECOM. To avoid the extra costs, libraries need to develop their own electronic mail system.

## ECOM Versus Mailgram

Western Union began to explore electronic mail delivery in 1965. This resulted in the purchase of a message system from William Von Meister, known as "Mailgram." The Mailgram system has three Central Phone Bureaus which have 24 hour toll-free answering services. By dialing a toll-free number one can call in a message which is then routed to one of two main-frame computer switching centers, called Infomasters. From here, the message is transmitted by Western Union to a local, high-speed printer near the destination, and a printed copy is produced. Western Union contracts with USPS for delivery of the Mailgram on the next day. Mailgram orders can also be placed by Telex, or TWX. New features include "Stored Mailgram" and a special private line, "Info Com."

The Mailgram investment cost $1.5 billion dollars and takes in over fifty million dollars annually. The average




cost of a Mailgram is $1.50. This high cost is partly due to tariffs imposed by the government. As large as the Mailgram system is, the capacity would have to be increased over 100 times to allow for the estimated 25 billion messages sent each year.

There are several reasons for the transition from the older Mailgram system to the newer ECOM. The ECOM system would be exempted from government tariffs, cost far less and be more efficient than Mailgram. The newer system would use the latest technological advances, such as packet switching, digital transmission, nonimpact Group 3 printers, and satellite communications. The system would be designed to handle the huge increases of electronic mail expected. In 1977, Western Union's total message volume was 31 million. The Postal Service has estimated the annual potential market for ECOM at 15 billion messages (*11*).

## International Systems

### *United States*

The Post Office has realized that the market for electronic mail does not stop at U.S. boundaries. International telephone calls increase 25% annually, and 40% of all U.S. phones have a direct dial capability to 80 countires. Plans for taking advantage of the international market rest with INTELPOST, International Electronic Post (*12*). Although delayed by the Federal Communication

Commission's refusal to grant necessary tariffs, the project is underway. In initial tests, INTELPOST sent facsimile messages between the United Kingdom and USPS sites in Washington D.C. and New York. Eventually Belgium, Argentina, The Netherlands, and (according to the original plan) Iran are to send electronic mail to each other via satellites. Although uncertain at this time, cost estimates are about five dollars per page. This high cost is largely due to government tariffs.

### *Canada*

In June 1980, there were transmissions of fax copies of documents between Toronto and London using satellites. Canada also has a link between word processing machines in Montreal and Munich, Germany, as part of the Teletex system.

### *France*

Spurred by a deteriorating postal system, France has ambitious plans for a national electronic mail system. The French Postal and Telecommunications Administration (PPT) has set specifications for a domestic facsimile receiver (*13*). The telecopying service will start in 1981. The PPT estimates it will have one million fax users in the mid-eighties. The postal trade unions are concerned because many workers will be replaced by the new electronic mail system.

The printer will cost about $400 and transmissions will take about two minutes per page. The system will use a thermal printer based on an element charge-couple device which reads the document to be sent. The unit is produced by Europest, a major producer of black-and-white picture tubes in Europe. Versatility is being incorporated into the printer. It can assist in photocopy services delivered into the home, receive messages, print a hard copy, or act as an output device for Prestel or the French equivalent, Teletel. However, many people doubt that the Prestel system can be used economically for electronic mail, since one would have to pay an extra fee just to connect with the videotext system.

### *England*

In 1982, the British will test Public Packet Switching Service (PPSS), a new electronic mail system. The Postal Service claims it will be faster and cheaper than sending information through ordinary letters. Cost estimates are four p, or six p less than the cost of a second class stamp. TELEX currently costs 70 p for the same message (*14*). The system would receive an electronically typed or word processed message from a disc or cassette, add a telephone number, and send a digitalized message when the "send" button is pushed. The computer will wait for an open line and then transmit the message. Because a memory device will hold the message, it can be recalled or even stored for a time when the telephone rate is cheaper. This is a "store and forward" capacity. Because the PPSS uses existing phone lines, they anticipate 4,700 users by 1983 delivering 40% of the United Kingdom's 30 million letters. Electronic mail revenues are expected to be about 1,100 million pounds annually by 1987.

Electronic mail is advancing faster in Europe than in the United States but not without problems. The Post Office Engineering Union (POEU) is fighting the advancement of message delivery systems in England. The POEU is granted a monopoly by law to maintain all of the phone terminals. Should competitors be allowed to offer better, more efficient, or cheaper systems, many jobs will be lost.

### *Japan*

The Japanese are working on a hybrid system using optical character recognition and an intelligent printer that would also handle color at one to two pages a second.

International standards are being established to ensure compatibility

among the various electronic mail systems. Because of a stronger commitment on the part of other nations to develop electronic mail systems, the United States has had little input in the formulation of these regulations.

## Radio Mail

William F. Von Meister, president, TDX Systems Inc., and the designer of the Mailgram system, is working on digital data transmission. He has developed a prototype electronic mail system called "Data Post" which uses ordinary F.M. radio signals to transmit the messages. According to Von Meister, "By modulating subcarriers of Muzak or other background music services we can effect digital data transmission" (*15*). Because the digitalized messages can carry much more information and communicate directly with the computer, he believes the capacity is great enough to carry a major portion of the present volume of First Class mail. This means that by using F.M. radio towers presently in place and high speed printers, Data Post would be able to give next-day delivery of facsimile-oriented messages in 60 major areas, at one-half the cost of Mailgrams. Von Meister also believes that digitalized information can be adapted to operate through telephones, A.M. radio, and television.

## Privacy of Electronic Mail

Business, industry, and government will be the first groups to use electronic mail. However, these organizations are also concerned with the security and privacy of their messages. When asked if electronic mail would be as secure as a letter, Geller, Assistant Secretary for Communications and Information, said it could be as private as space and defense communications. He suggested there would be "typical security," protected by the overwhelming volume of junk mail that spies would have to sort through, and available for a higher cost, there would be offered a "very high security" option that would use a code system not yet developed (*16*).

Independent research on new security codes for common usage are progressing rapidly (*17*). These new codes use math equations as the key. For everyone to have their own code, some special systems would have to be available. This specialized code would enable anyone to send a message but only allow the person with the unique key to be able to decode transmissions sent to him or her. Such a prototype code is in use at selected nuclear research plants and reactor sites where tight security is required. It is based on the idea that knowledge needed to encode is not the same as the knowledge needed to decode a message. The decryption is made public, and the encryption key is kept a secret. The code system is waiting for National Security Agency approval.

Some system of this type will be essential in the future. Today experts say that, on average, only one in every 100 cases of computer crimes is detected (*18*). Having this security system would eliminate the worry caused by information being routed to the wrong person or company.

Fortunately, librarians are not that concerned with industrial espionage, and present means would be adequate to insure library message privacy and the confidentiality of our clients.

## Electronic Mail in the Library

The OCLC interlibrary loan system is one well-documented example of the use of electronic mail systems by librarians. This service incorporates several levels of electronic communication or electronic mail. Yet, successful as it is, OCLC is only the beginning. The next step points toward the transfer of short articles, papers, and even chapters of books using a CRT or a Group 3 printer.

Attempts to stimulate librarians' interest in electronic mail systems has come from many sources. Computerland, Bibliographic Retrieval Service, Systems Development Corporation and

The Source Telecomputing, Inc., now offer limited service modules designed for libraries.

The Communications Engineering Branch of the Lister Hill Center has "begun a program to design, develop, and evaluate an experimental system that will electronically store, retrieve, and display documents" acquired by the National Library of Medicine (*19*). This electronic mail system will be useful for interlibrary loan service and significantly contribute to the N.L.M. mission to act as the national archive for biomedical literature.

Whitney Lab. Dr. Richard Smith, the director of Whitney Lab, states that although the initial cost was high, the system was "economical and effective" when the time and speed of the document delivery was considered.

Planning should begin for a national link of major library systems in the United States with facsimile printers and CRT's. The library could become the heart of electronic mail. The ILEM system would allow for a new meaning to interlibrary cooperation and networking. Librarians would set the example and forge new uses of elec-

**A national electronic system of libraries would offer users an accurate and inexpensive opportunity to obtain copies of materials from nearly anywhere in the country within seconds.**

Diversified systems or links of this type will continue to proliferate as administrators realize the potential uses of electronic mail in libraries. As electronic links become more numerous, it will be desirable for librarians to establish their own point to point Interlibrary Electronic Mail (ILEM) network. Using ILEM, a user's request for an interlibrary loan of a short article could be accomplished within minutes. The requested document could be sent as facsimile transmissions or even displayed on the library CRT.

One library electronic mail link has been set up already. A recent *Wilson Library Bulletin* describes an electronic mail system using a high speed fax printer operated by a library assistant (*20*). The Marine Biological Laboratory at Woods Hole, Mass., is linked to the C.V. Whitney Lab for Experimental Marine Biology and Medicine in St. Augustine, Fla. Digital transmission of documents is done using a Rapicom system and the telephone. Transmission of their material takes only seconds. The printer can send and receive material. The University of Florida at Gainesville is also linked to

tronic mail for others, even the USPS, to follow. A national electronic system of libraries would offer users an accurate and inexpensive opportunity to obtain copies of materials from nearly anywhere in the country within seconds. The ILEM system would not only be advantageous to librarians and users, it would also save energy.

The initial investment needed to start an electronic mail system is high, but many libraries are developing computerized systems for automation which could be expanded to include ILEM. Even small libraries will be able to tie into the system as part of a network with a small computer switching center. The cost of electronic mail systems will continue to drop as technology continues to improve and as more companies become involved.

There would have to be a transmission fee established for all copyrighted materials. This fee would automatically be recorded and charged to the user. The system to allow this type of predetermined charge is already part of the National Periodical Center Project. When the copyright problem is solved, any material could potentially be repro-

duced anywhere within minutes. Long items would probably continue to be sent by the traditional method of interlibrary loan via the Post Office.

For a library electronic mail network to become a reality, we must push and fight for our rights. Our professional organizations will need to become more aware and involved in communication regulations.

## Conclusion

The wave of electronic mail is on the horizon. However, electronic mail is only one aspect of the advancing world of information technology. There are other equally significant technological advances being made which challenge the present role of the library. The next step after electronic mail is probably going to be "Voice-Mail" (*21*). AT&T's Antilope and 3M's Datapoint systems are already working to eliminate the previously unsolved problem of a Donald Duck sound caused by the digitalization of voices.

Voice activation technology—also a spinoff of electronic mail—is nearly here. Prototypes of voice systems can recognize 95% of the terminology used in English, and Japanese language systems are even more accurate (*22*). One can expect to see voice-activated typewriters and appliances for sale by the middle of the 1980's.

Work is underway at the Massachusetts Institute of Technology, to make the CRT more like a book by perfecting a method that gives the impression of pages being turned in a book or magazine on a CRT screen. In the future, users will be able to thumb through the pages of their desk terminals.

The role of the library in the future will be to gather, organize, and disseminate information—and to provide this information within seconds rather than the days or weeks it takes today. The user will demand and expect this timely service. Great strides have been made by bibliographic utilities, databases, and online catalogs, but those are only the first steps.

Let the history books show that librarians led in the development and application of electronic mail systems for the benefits of their users. You stand at the threshold of the information era, and as librarians you have the opportunity to lead the way.

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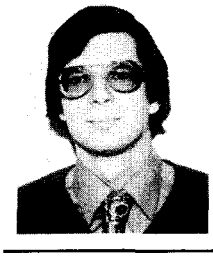

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# Is There a Future for the End User In Online Bibliographic Searching?

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■ **As access to computer terminals becomes an everyday reality, many end users, particularly those in research, will undoubtedly attempt to perform their own online bibliographic searches. Regardless of the concerns of librarians regarding the results of this development on the effectiveness of the search, this is a challenge that librarians and library educators will have to face. The concerns and problems of end user searching are discussed, new developments in the field of online access are reviewed, and some recommendations for meeting the challenge through education are discussed.**

The concept of end users searching online bibliographic databases touches many sensitive chords and is a matter of concern to librarians. These concerns range from doubts that end users can master the intricacies of searching to fears that librarians will no longer be needed if end users undertake their own searches. These concerns may be legitimate, but they should not remain unresolved.

## Concerns about End User Searching

As the use of computers for problem solving becomes more widespread, and as the price of computer terminals becomes more affordable to the general public for office, home, and laboratory use, we may expect the end user to use the terminal to access all types of information. This does not suggest that either the need for a library or librarian will diminish as we approach the 21st century. Instead, this development may lead to the expansion of centralized searching services in which the library search analyst is the most important component. It may also mean that systems designers will provide systems that are more adaptable and responsive to use by nonexperienced searchers.

Librarians have accepted direct end user interaction with some types of

computerized bibliographic files. They have conceded that the end user who is familiar with the technique of searching author, title, and subject entries manually in a card catalog can transfer this skill to searching the same elements in a computerized catalog file. And they have found that users will be comfortable using the terminal and the display on the video screen, particularly if it does not differ dramatically from the display on a catalog card.

Reports from libraries that have closed their card catalogs have been extremely positive (*1*). Librarians have noted that end users are not only willing to search online catalogs but also enjoy the use of the terminal. Librarians have also reported that they have not had to intervene in the computerized searching process to any greater extent than was necessary in a manual search in a card catalog.

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If we can assume that end users can effectively search and retrieve author and title information from a "computerized-card-catalog," we can move to the next step and assume that end users can retrieve a variety of information from other bibliographic online files as well.

In 1977, John Bennett suggested that we should expect the intermediary/end user pattern of bibliographic searching to change, and that, eventually, end users would become their own information specialists (*2*). Some database producers are already anticipating this change and are planning to provide educational programs that will enable end users to perform their own searches. BIOSIS is among the pioneers (*3*).

Certainly, it can be expected that producers will not overlook a potential user market that will undoubtedly increase as systems and design software are modified to facilitate machine/user interaction. It is to their advantage to have educated and trained end users in addition to the traditional library/information science intermediary.

In order to respond proactively to future change, we should examine the concerns of librarians, as well as the problems and situations that have been responsible or have inhibited end user interaction with computerized bibliographic databases. Many of these were identified in the last decade by John Bennett (*4*), F.W. Lancaster (*5*), and others. Bennett, predicting that the card catalog would be closed and replaced by the computer stated:

> The possibilities for interactive search have captured the imaginations of information scientists both inside and outside the library context. How shall we have succeeded in bringing this potential to realization? How well have we recognized and accepted the double challenge of organization of the mechanism for search and the casting of it into a useable searcher interface? How prepared are we to build the transitions for a relatively familiar yet underused tool such as the card catalog to the new world of the interactive search? (*4*, p.5).

Bennett itemized problems that had to be addressed relative to end user/machine interaction:

- Can a system be designed for use by the general public?
- What are the characteristics of the users served by the facility?
- What are the problems in the education and training of the end user?
- What are the operational characteristics of the facilities that place constraints on use by the end users?
- Is the assumption that end users are less motivated to do their own searching valid?
- Will the end user use the facility often enough to gain expertise in the use of the system?
- Will he use the system enough to make it cost effective?

To date, these questions have not been satisfactorily answered.

In the early seventies, when online searching became a reality and the demand for online bibliographic information increased beyond expectation, the end user did not become the searcher as might have been expected. Instead, in order to meet the information needs of the users, to expedite service, and to provide immediate searching capabilities, the scenario that emerged was that of the information specialist who acted as the intermediary between the computer system and the user. That intermediary—a librarian, a subject specialist or a combination of both—intercepted the user's inquiry, translated it into the language of the appropriate system (e.g., DIALOG, BRS, ORBIT, RECON), and then provided the users with the results of a search. At this point, the end user became involved. Although the intermediary evaluated the results of the search, the end users actually measured their satisfaction with it.

As a result of this process, the intermediary became aware of the problems involved in online searching, identified obstacles in the search process or in the computer system, and reported these to vendors, systems persons, or database producers. The latter, in turn, directed their attention to the needs, education, and training of the intermediary rather than the end users. Meadow observed that librarians and users may expect this situation and their roles to remain static (*6*). Thus, the efforts of vendors and database producers were directed toward improvement of the intermediary/computer relationship rather than improving the system so that end users might access the systems directly.

Fortunately, progress is not unidimensional. By identifying the problems encountered by the intermediary in searching computerized databases, progress is also being made in designing systems that, in turn, can facilitate end user searching. Even a factor as simple as keyboarding has been examined. Since all users are not touch typists, other than standard touch typing keyboards have been developed.

We have been led to believe that end users are not searching and probably will not do so for psychological and behavioral reasons: They lack sophistication and have limited motivation; they will not search often or extensively enough to develop any degree of expertise; time spent by users online will be costly and ineffective. These concerns may be valid, but considerably more research is needed to either substantiate or reject these premises; and to identify current users.

Carol Fenichel is among those who have undertaken some research in these areas. For her dissertation, Fenichel studied "the differences among the searches of users of online systems who have different amounts of overall experience" and "the differences between the searches of persons with and without experience in the data base being searched" (*7*). She selected novices (library school students at Drexel University School of Library and Information Science), moderately experienced searchers without ERIC experience, moderately experienced searchers with ERIC experience, very experienced searchers without ERIC experience, and

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very experienced searchers with ERIC experience. Searches were performed on the DIALOG system using ONTAP.

Fenichel noted: "The results showed, that compared to the experienced subjects, the novices performed surprisingly well. Although as a group they searched more slowly than the experienced subjects, made more errors, and scored lower on most (but not all) outcome measures, the differences were not as great as might be expected" (*7*, p. xv). The results of this study were limited, but a good beginning. The Fenichel study was part of a larger project aimed at developing a system for end users that would enable them to perform online bibliographic searches (*7*, p. 5).

Meadow, one of the foremost supporters of education for end users, has, to some extent, explored the matter of motivation (*8*). He observed that the end users who are most likely to perform their own searches are persons comfortable with computers and computer systems. They are not necessarily traditional library users. Wanger observed that persons who view the use of the terminal as part of their normal work patterns will be motivated to invest in learning to search (*9*). It has also been suggested that as users become aware of the browsing capability of computers, they will feel sufficiently motivated to conduct their own searches.

The question of whether continuous searching is necessary in order to be a searcher—and here we are begging the question of whether it is necessary to becoming a good searcher—or whether it is dependent on the mental or personal traits of an individual is yet to be fully explored. Van Camp (*10*), and Dolan and Kremin (*11*), identified some of the characteristics of an online searcher. They cited such qualities as self-confidence, a logical and keenly analytical mind, skill in communication, infinite patience, a retentive memory and dogged persistence—qualities that might also be possessed by end users. However, it is possible that learned reference skills and the ability to organize knowledge are the more critical characteristics and qualities required of the searcher. Additional research in these areas is in order.

We should expect that differences in the searching patterns of end users and intermediaries will exist. Mallen found that information specialists tend to be more exhaustive in their searching habits; end users more arbitrary (*12*). End users do not always think in terms of thesauri and indexes. They fail to use all possible alternatives to searching databases. Nevertheless, end users do search in spite of their lack of sophistication and their lack of knowledge of indexing techniques.

There are end users who search directly and some who work with the intermediary. In 1975, Wanger studied the searching behavior of professionals, researchers, scientists, engineers, students (graduate and undergraduate), lawyers, and marketing and sales personnel (*9*). She noted that in approximately 27% of the searches performed in that study, end users worked directly with the intermediary at the terminal, guiding and providing immediate feedback relative to performance of the search. In about 5% of the instances, end users preferred to execute their own searches in spite of the availability of an intermediary. They performed effectively.

## Obstacles to End User Searching

Although machine-readable information was initially created for the benefit of end users, access to the use of this information has been impeded by the design of the online systems, by the multiplicity of available online retrieval systems, by variations in retrieving information from individual databases, and by the proliferation of these databases. The complexity has been such, that for the end user, there appears to be some mystique in the process of accessing and retrieving information for online databases. Although there is nothing mysterious

about searching, there are real problems.

Nickerson enumerated differences he found in using the various command languages required of different systems (*13*). Login and logoff protocols, command grammar, conventions for defining functions and procedures, techniques for array handling, options available for output formatting, editing features, and techniques in string manipulation and searching presented real barriers to ease in searching and were frustrating for inexperienced as well as experienced searchers.

tional Library of Medicine public card catalog online. The interface is not intended to provide all the capabilities of the main computer system, Elhill III, but only to emulate the card catalog for the casual, less sophisticated user. The authors appear to be introducing the concept of a "customized interface" for users at various levels of sophistication.

Marcus addressed the problems of end user interaction with "heterogeneous bibliographic retrieval systems" (*17*). With his colleague, Reintjes, Marcus has been experimenting with Connector for Networked Information

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A number of recommendations have been made to alleviate what Atherton has referred to as the "veritable Tower of Babel" (*14*). These include standardization of login and logoff protocols; development of interface languages between the computer and the searcher; development and standardization of the use of technical terms and symbols—recommendations presently under advisement by Committee Z39-G which is currently chaired by Atherton (*15*).

A decade ago, Bennett suggested an interface language, a type of negotiated search facility, that would enable end users to formulate queries in their own terminology that would, in turn, be translated into machine terminology through an intermediate computer program (*6*).

Since that time, Goldstein and Ford of the National Library of Medicine have developed a user-oriented interface that accommodates different types of users and their inquiries (*16*). They have experimented with a user-cordial interface—a system friendly to the user—that searches CATLINE, the National Library of Medicine public card catalog online. The interface is not intended to provide all the capabilities of the main computer system, Elhill III, but only to emulate the card catalog for the casual, less sophisticated user. The authors appear to be introducing the concept of a "customized interface" for users at various levels of sophistication.

Marcus addressed the problems of end user interaction with "heterogeneous bibliographic retrieval systems" (*17*). With his colleague, Reintjes, Marcus has been experimenting with Connector for Networked Information Transfer (CONIT), a computer intermediary that "translates" the end users requests into the appropriate command language of the retrieval system for which the user's request was intended. CONIT transmits the translated request over appropriate network communications connections to the retrieval system and receives the response from that system which it then presents to the user in a common format. In this manner, the network of heterogeneous systems is made to look like a single virtual system to the user.

In reporting on this experiment, Marcus stated: "Experiments with CONIT have demonstrated that even inexperienced end users can operate the intermediary system to get some relevant documents in reasonable amounts of time" (*17*, p. 349). However, he also observed that "computer intermediaries of this kind have not yet approached the retrieval effectiveness achievable by expert human intermediaries working in conjunction with the end user."

While considerable effort is being made to alleviate the problems in-

volved in searching multiple retrieval systems, others have been concerned with the problems involved in multiple database searching. Robert Niehoff addressed the problem of "heterogeneous database vocabularies and how these differences can be neutralized to facilitate multi-based switching" (*18*). His Vocabulary Switching System (VSS) permits the system to translate user requests into search queries *across* target databases with little user intervention.

Marcus and others have been exploring various search aid techniques that end users can employ in using search saves; in techniques that will automatically enable the user to select the appropriate database from the vast array of available databases; in searching on keyword stems found in the user's natural language expression; and, generally, in trying to find a "simple individualized search strategy formulation for different databases" (*19*).

Martha Williams and Scott Preece report that their system, "an integrated man/machine interface to facilitate network resource utilization," is still another approach to accommodate the end user's search of a variety of online systems (*20*). Their "transparent system" is designed to eliminate the various problems associated with variations in access protocols, command languages, search techniques and output format.

sions in which the search is not exclusively in the hands of the intermediary. Wanger pointed out that in many cases the intermediary was dependent on the subject skill of the end user (*17*). In such instances, it appeared that the intermediary was acting in a quasiprofessional capacity: a person familiar with the techniques of searching but needed only in a supportive role. This raises two questions. Does the subject specialist want to relinquish control of the search to an intermediary? Is the intermediary in complete control of the search only in those instances in which he/she has strong subject background?

## Solutions

Searching requires a high level of intellectual activity. The current mechanics of searching, the structure of individual bases, the multiplicity of command languages, and other obstacles to ease in accessing online databases are such that even intermediaries require training and continuing education in order to effectively interact with the computer. For the same reasons, educational programs should be developed for end users.

We are in a period of transition. Although the intelligent terminal may be the solution and will facilitate end user searching, there are, at this time, end users who want to search and many more who will want to in the future. Elias and others (*3*) have pointed out that database producers such as BIOSIS are returning to "end user points of consumption" and are preparing programs to train and educate the end user in the searching process. Librarians,

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An aspect of online searching that is not system dependent, but one that creates obstacles and problems, is the extent of subject specialization needed by the searcher. As mentioned earlier, while the intermediary may dominate the searching process, there are occa-

information scientists, and library educators should also play a role in this process, just as they do in any form of bibliographic instruction. The question is when, where, and how can this training be effected?

One of the techniques that might be considered in end user education is the use of computerized instructional programs. Several programs have been developed or are in the developmental stages.

Individualized Instruction for Data Access (IIDA), developed by Charles Meadow (*21*) is one such program; TRAINER, a computer program for users of DIALOG and ORBIT, developed by Elaine Caruso (*22*), another. The performance and effectiveness of IIDA as a teaching tool has been tested and is still to be retested. In a joint experiment conducted by the Franklin Research Center at Drexel University and EXXON Research and Engineering Company, IIDA was tested to assess its value as a diagnostic system in an assistance mode; as a teaching system, and for its appeal to a user group of engineers. Landsberg and others (*23*) who reported on the experiment stated that in spite of the constraints and reservations they had regarding the nature of the experiment itself, their impression was that participants liked using IIDA and online searching. Several engineers requested that IIDA software be installed, and various groups at EXXON are already undertaking their own searching.

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Individualized training programs, such as the one developed for congressional staff in the use of Library of Congress SCORPIO, have proven successful. Griffith's (*24*) evaluation of this training program concluded that properly trained end users will use online systems to meet their information needs.

At the present time, there are innumerable printed manuals, searching aids, and guides used by the intermediary to facilitate searching. Perhaps these should be expanded and aimed at the end user. This would be of particular benefit to those subject specialist end users interested in accessing databases in their own fields. Training packages containing slide-tape programs and video cassettes illustrating the searching process might also be used to train end users. The variety of teaching programs will be as extensive as the ingenuity of librarians, information specialists, database producers, and vendors.

## Conclusions

For those who question the probability that end users will be motivated to search or will perform effectively, Meadow reminds us that a decade ago no one would have presumed that computer programming was anything but an inviolate activity of a particular group (*6*, p. 51). Today, there are innumerable amateur programmers in addition to the professional programmer.

We can expect that many users will continue to turn to the intermediary as the searching specialist since there are as many differences in the research and searching habits of the public as there are in personalities. P.W. Williams observed that "there will always be some who will never be happy to turn over the search and others who would cheerfully accept almost any search results rather than perform the search themselves. There are research workers who know the literature extensively and do not want the intermediary for anything but delivery of the document. There is the subject specialist who can perform his own search in a narrow field but would be at a loss in trying to

obtain a search in a multi-disciplinary field, who would eagerly turn the search over to others" (*26*).

As finger tip access to terminals becomes more of a reality, the signs point to increased end user searching. It is possible that members of the research community may be able to dial directly into the appropriate database when they call a library for information. Many organizations may prefer to mount the most frequently accessed bibliographic databases.

Once the end user does learn to search, there will be innumerable benefits for the profession. Meadow pointed out that the type of inquiry directed to the professional can be expected to change and that the reference interview, when necessary, will be more meaningful. The end user will probably handle elementary inquiries, while the intermediary/information specialist will be called upon for the "top-of-the-line searches." A new breed of intermediaries may eventually develop ". . . so skilled and expensive, that management will not want these persons to execute the 'you-tell-me-what-you want and I will find it for you' searches" (*6*).

We can only hope that, as librarians and information specialists become more confident that end users can search and will not contribute to a shrinking job market, they will facilitate and extend the use of this powerful bibliographic resource to end users.

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# The Government Library as a Community Resource

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■ **The Consumer Information Centre of the Ministry of Consumer and Commercial Relations is providing services and programs to encourage the development and use of community-based consumer information services and resources. By working with existing networks of information suppliers, the Centre seeks to minimize duplication of effort and to maximize access to consumer information. Specific strategies are discussed which may have application to other government libraries and to those with responsibilities to multiple client groups which are geographically remote.**

THE ONTARIO Ministry of Consumer and Commercial Relations, through its Consumer Information Centre, has developed strategies for delivering consumer education services across a province with a population of 8½ million people.

The key to responsive programming has been to involve resource people who are known in the community (*1*, p. 96), who know local information needs and available resources, and who are, therefore, best able to respond to individuals directly. Centre staff does not deliver or implement programs and services. Rather, existing agencies and information specialists take on this role. Several of these approaches, as they relate to library services, are outlined here as examples of ways to indirectly assist individual consumers.

Consumers in the province of Ontario are particularly fortunate in having a wide variety of information networks from which to gain prepurchase information as well as assistance in resolving any consumer problems. The Ministry of Consumer and Commercial Relations seeks to encourage the consumer to meet his or her needs at the local level, rather than centralize requests through its head office operations. The Consumer Information Centre has a responsibility to provide support services and to act as a backup resource to community information services.

Given constantly tightening budgets and increasing constraints on the delivery of service, it is particularly important not to "reinvent the wheel." Since both community information

centers and public libraries are funded by the Ontario provincial government, it makes good sense to support these programs at the local level and to make consumers more aware of the plentiful consumer information and assistance available in their own communities.

## Background

The Centre is actually a multi-service program with three distinct operations:

*Public Inquiry Services*—This service in French and English seeks to improve the information skills of consumers by advising them of their rights and responsibilities, especially as they relate to ministry programs and services. Collect telephone inquiries are welcomed from across the province.

*Library Services*—The library service exists to encourage community information services, adult educators, and ministry staff to use consumer and corporate affairs resource materials appropriate to their individual needs.

*Consumer Education Outreach*—This education program seeks to promote a preventative, self-help approach to consumer education at the community level. Assistance is provided to consumer educators, including teachers, social workers, family counsellors, information specialists, and adult educators.

As with the majority of government libraries, the Centre's library staff provides the usual special library services to ministry staff. The Centre departs from the norm of government libraries in that its clientele includes, in addition to ministry staff, consumer educators and information specialists across the province, whether they are in the public or private sector. Consumer affairs professionals can be found in the school system, industry associations, community colleges, major retailing and supermarket chains, and social service and information agencies.

In the Centre, adult education and public inquiry staff work together with library staff to meet the needs of three key target groups: ministry staff, consumer educators, and the general public. The resource collection is the core from which all three teams draw. Whether designing innovative learning resources, providing support materials for workshops, or answering public inquiries, the collection serves as the primary source.

On a long-term basis, the Centre will continue to act as a catalyst to develop consumer education programs which may be delivered by community group leaders on an ongoing basis, and to act as a resource to community information services. Ontario has experienced an increase in these kinds of services in the past few years, as has the rest of Canada.

## Strategies

In addition to regular government library service goals, the Centre's library service tries to share information sources of consumer materials, as well as resources, in order to encourage the development of substantial consumer resource collections throughout the province and to foster consumer use of these resources at the local level. To a lesser extent, Centre staff also assists with staff training and development related to consumer information.

## Sharing Resources

The Centre assists librarians in developing their consumer resource collections by providing a preview service by mail. For instance, consumer educators and school librarians can borrow expensive, consumer education multimedia kits or curriculum guides in order to examine them prior to purchase and to assess their effectiveness.

In a similar fashion, the ministry has produced a number of 16mm films to highlight key consumer concerns. Through a distribution service, the films are made available to teachers and community groups on a free-loan basis.

## Sharing Information

Since "the key to consumer emancipation is better information," (2, p.9) one of the key services of the Centre is sharing information about new consumer information resources with those who are building their own collection, or who wish to occasionally access highly specialized research materials. To this end, the Centre produces regular bulletins that are circulated to regional public libraries, community information centers, northern affairs offices, and constituency offices. In addition, the Centre has a regular column, "Consumer Buy-Line," in the *Ontario Library Review* which reaches every public library in the province.

For those who are actively building consumer resource collections, the Centre's librarian has developed a series of bibliographies on topics ranging from consumer issues in the eighties to adult basic education. An annotated bibliography is available on consumer education resources of particular interest to schools and board of education resource centres, as well as a companion volume for adult educators that indicates reading levels in ABE materials with an emphasis on consumer matters.

Finally, the Centre staff acts as a backup resource for reference librarians. Since the Centre welcomes collect calls, librarians from across the province are able to make consumer-oriented inquiries at no charge. A Key Contacts list of ministry staff is published semi-annually to ensure that all provincial information services have up-to-date access to ministry programs and services.

## Promotion of Local Consumer Information Services

The Centre's policy is to encourage consumers to access consumer information within their own community. Therefore, a number of initiatives have been introduced to reinforce and promote this policy. A portable library display unit, as shown in Figure 1, is being developed for circulation through the province's regional library networks to individual public libraries. Each unit is small, light, and compact with colorful graphics. The tabletop area is reserved for handout copies of


Figure 1. One of the prototype portable display units being developed in English and French for the Ontario regional library systems.

consumer pamphlets, and most importantly, materials from the public library's own collection, e.g., consumer periodicals, product test reports, and buying guides. Display materials are prepared in both French and English. The regional library network will be arranging bookings and shipping. In the pretest, both rural and urban libraries experimented with the French and English units. The results indicate that the general concept should work well.

Another feature of the Centre's policy is to refer phone or mail requests for information on product test reports or other general consumer topics to the caller's local library. In this, the Centre seeks to reinforce community access to consumer information while avoiding fragmentation of information systems (3, p.61) and duplication of public library services.

## Staff Training and Development

The Centre's staff also offers librarians assistance in professional development concerning consumer-related collection development, and reference services. The consumer education staff has designed a series of regional consumer rights and responsibilities workshops for public librarians, community information centre staff, as well as social services agency representatives. These workshops provide information on consumer legislation, redress mechanisms, effective complaint handling, and generally help to develop the participants' skills in handling consumer complaints and inquiries at the local level. Each workshop is evaluated by participants with regard to the importance of the topic, the competence of the workshop leaders, the workshop format, and the value of the resource materials. This ongoing evaluation process allows the Centre's staff to keep the workshop content relevant to a consumer education audience. To date, an 80–90% level of satisfaction has been reported by the consumer workshop participants.

## Workload Considerations

In selecting those initiatives which would provide more consumer information at the local level, the Centre examined alternatives to identify those which would make the least demands on Centre staff and Centre resources, both human and financial. By using existing communications vehicles, such as an organization's internal staff bulletin or professional association newsletter, the Centre staff develops only the article or news feature, without being concerned about production systems of other organizations, including their mailing lists.

The Centre selects those kinds of activities that can be handled in a modular fashion, i.e., that can take place at selected times throughout the year. For instance, articles are written and presentations are scheduled when workloads are somewhat lighter. Students have helped out on work placements and, during the summer, have prepared articles for publication. In this way, the Centre can prepare for up to a year's programming through a manpower investment of just four months.

Responsibility for assisting with the dissemination of consumer information and resources across the province is shared by several staff members. No substantial demand is made on the time of any one person; rather, each member has an occasional responsibility to handle one particular assignment.

## Summary

By working with information networks across Ontario, the Consumer Information Centre is able to increase access to consumer information for public library users. In addition, other information specialists, such as community information staff and business information offices, are encouraged to develop their own local consumer information resource collections. In this way, the consumer is encouraged to seek information using existing agencies and resource personnel.

The initiatives that have been implemented by the Centre have been selected to minimize duplication of effort, while ensuring that the Centre's staff and budget are used for maximum effect.

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# Author Indexing

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■ **Indexing terms supplied by authors can increase subject control of their documents. The terms can be used in the creation of indexes, abstracts, and other devices for information retrieval in the special library. An examination of the American Mathematical Society author indexing program suggests that contributions of authors enhance the indexing efforts of editors.**

The important function the author of a document fulfills in the area of subject control is especially evident in the special library community, where some library users also are authors of documents held by the library. An author can provide subject control most explicitly by including in the document itself indexing terms—keywords, subject headings, classification numbers, descriptors—that describe the content of the document. Other means available to the author are implicit, if only because we expect a document to have a title, references to other documents, and a text. Yet, the selection of title and references and the creation of the text are exercises of subject control by an author.

The special librarian can use these explicit and implicit author contributions in any situation that requires subject control, including: indexing and abstracting, current awareness programs, physical organization, and information retrieval.

Of special concern here is author indexing, including the author indexing program sponsored by the American Mathematical Society (AMS). The contributions of mathematics authors in the Society's program are quite clear, making feasible a comparison of author indexing with indexing supplied by the indexing/abstracting tool, *Mathematical Reviews*.

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## Author Indexing

Author indexing is a form of source indexing, a generic term for the publication of indexing terms in the same issue of the report or journal as the document indexed. Source indexing is a counterpart of monograph programs like cataloging in publication. The assigner of source indexing terms may be the author, or an editor, indexer, or some combination of these individuals. In author indexing, the author of the document assigns the terms.

Discussions of source indexing have taken place at least since the early 1960's, when some writers urged journals to accompany articles with author assigned indexing (*1,2*). Two of the first source indexing programs existed in the fields of chemical engineering and physics. The architects of these programs sought to save time and money by improving articulation between primary and secondary literatures. They were successful enough to receive congratulations from former Senator Hubert H. Humphrey, "for advancing the use of an indexing system to help simplify and speed the handling of data all along the line—from the author to the ultimate user" (*3*).

Beginning in 1961, the chemical engineers published "catalog cards" in the journal, *Chemical Engineering Progress*. The cards contained not only abstracts and bibliographic data but also keywords for each article published in a given issue. Although it was not clear who provided the source indexing, it was expected that authors eventually would assign the indexing. The American Institute of Physics began its aid-to-indexing program in 1963, requiring contributors to some journals to submit keywords with their articles. *Applied Physics Letters* did publish author-assigned data concurrently with the articles, but the main objective of the program was to use the data to assist in the preparation of annual indexes to *Applied Physics Letters*. Thus began the present-day practice of source indexing.

Today, source indexing is used in journals such as *ACM Computing Surveys* (*Computing Reviews* class numbers), *Applied Physics Letters* (Physics and Astronomy Classification Scheme numbers), *The Canadian Journal of Statistics* (keywords and AMS Scheme numbers), *Journal of the Japan Society of Mechanical Engineers* (keywords), *Journal of Solution Chemistry* (keywords), *Ukrainian Mathematical Journal* (Universal Decimal Classification—UDC—numbers), and the *Unesco Journal of Information Science, Librarianship and Archives Administration* (UDC numbers).

## Author Indexing in the Special Library

When author indexing is available, it can assist in the production of tools such as general indexes, personal indexes, abstracts, current awareness reports, and online search strategies.

If a library has no commercial index that covers a given journal, or if an available index is quite slow in extracting articles from the journal, a library has the opportunity to create its own, perhaps temporary, index. Vesenyi has suggested using author indexing terms in such an index (*4*). For each journal to be covered by this local index, a library staff member records on paper or in a computer file brief bibliographic information for the articles as an issue is being checked into the library. Author indexing terms serve as the subject headings or descriptors for these records. If the index covers many journals, some accommodation may be needed for multiple types of author indexing. There may be separate files for records with terms selected from controlled vocabularies—e.g., the UDC or a thesaurus of terms—as well as a separate file for records with uncontrolled keywords.

### *Personal Indexes*

Author indexing terms also are appropriate for creating records for a personal index, whether it be for the librarian or user. The individual need select from a given journal only those

articles of personal interest; any journal is a source of such articles, even if the journal is covered also by a commercial or local index. The selection of an article for study, for inclusion in a personal index, or for distribution in a current awareness service can follow from an examination by user or library staff member of the author indexing terms accompanying the article.

### *Abstracts*

If a library produces abstracts of the documents it acquires, the abstractors already peruse documents for author supplied information: title, references, illustrations, and the text itself. Indexing assigned by the authors yields yet another hint of subject content.

### *Online Search Strategies*

Online searching of bibliographic databases can locate documents that are similar to an identified document known to be relevant to a client's needs. If the known document has author indexing terms, the searcher has a starting point from which to develop a search statement. This is an especially useful device if the known document is not in the database and therefore lacks indexing terms that can be readily discovered by querying the database.

These uses of author indexing are applicable for any kinds of source indexing terms; however, it is necessary that the source indexing exist. The special library can increase the incidence of author indexing, for both internal and external documents.

### *Internal Documents*

If library users and/or staff produce a sizeable portion of the documents distributed by the library, this internal publication program can be well served by author indexing. Authors can list indexing terms on a transmittal form, which might include the author's abstract. The terms are either uncontrolled keywords—perhaps extracted from words in the narrative of the documents—or controlled classification numbers or thesaurus entries. Management of the author indexing program will require some decisions, such as: whether to create a thesaurus or to use an existing one, if the terms are to be controlled; how many indexing terms typically should accompany a document; if the terms are to be ordered—by relative importance, for example; if there is to be an indexing term for each of several predetermined facets, such as material tested, test method, and apparatus; whether the terms can be accepted as is or require editing.

Once accompanied by author indexing, these internal publications can serve as aids in subject control activities. In addition, the physical arrangement of documents can follow from examination of author indexing terms. For example, if author indexing consists of several classification numbers, one can shelve the documents in class order according to the initially listed term; photocopies of title pages can appear in the positions suggested by the subsequent terms.

### *External Documents*

The creation of author indexing terms also applies to external documents, available to users outside the immediate service area of the library. When a library user or staff member is the author of a document, the library has the opportunity to assist fulfillment of author responsibilities to subject control. If an editor requests indexing terms from an author, the librarian is a source for helping authors who might be indexing for the first time. By providing appropriate controlled vocabulary lists and expert advice on how to use them, the librarian assists the individual who has become like Alvin Toffler's prosumer: not only a consumer but also a producer of documents and their indexing representations (5).

Even when author indexing is not required, the author's responsibilities for subject control extend beyond

explicitly listing indexing terms. There are other ways an author can influence, at least indirectly, the selection of indexing terms by a professional indexer: The author's title can become an entry in a KWIC/KWOC index; it can provide terms that an indexer extracts as keywords; or it can be matched to terms entered into an online search. The author's listing of references can suggest the content of a document via an analysis of co-citation, in which an analyst seeks documents with references to two or more previous works or authors known to be relevant to a particular subject. Even the narrative of a document affects subject control. As Bernier has noted, the selection of concepts is the work of the author; subject control depends on such selection (*6*).

## Author Indexing vs. Editor-Assigned Indexing

In order to ascertain the relative usefulness of author indexing and editor-assigned indexing of journal articles, the author developed a comparative study of the two forms, contrasting the indexing program of AMS with that of the indexing/abstracting tool, *Mathematical Reviews (MR)*. The question arose: Would it make any difference to users of *MR* if editor-assigned indexing terms in *MR* were to be replaced by author-assigned terms? Informal observation has indicated that often it is easier for an inexperienced searcher who is not a subject specialist to determine the subject content of an article by examining indexing terms rather than by attempting to read the article or its abstract. When author indexing is available, the former method works even if the article has not yet been reviewed by *MR*.

AMS indexing terms are classification numbers of the "1980 Mathematics Subject Classification Scheme" and its pre-1980 editions, all referred to as "the AMS Scheme" in this paper. For example, S. Friedland's 1975 article, "On Matrix Approximations" (*7*), has a 1975 *MR* entry that lists the terms 65F35, 15A60, and 41A65. In the AMS Scheme, these terms represent matrix norms, norms of matrices, and abstract approximation theory, respectively. Each AMS Scheme classification number, such as 65F35, consists of three parts: a major class number, 65 in this example; a subclass letter, F; and a subsubclass number, 35. *MR* editors, who assign one to three (but rarely more) terms per article, indicate that the article deals especially with matrix norms, since the article abstract appears in the 65F35 section of *MR*.

If an article has appeared in an AMS journal such as *Bulletin, Mathematics of Computation, Memoirs, Proceedings,* or *Transactions,* since 1970, the AMS has required the author to submit along with the article manuscript classification numbers selected from the AMS Scheme. These author indexing terms appear on the title pages of articles. Author indexing for the Friedland article consists of the terms 15A60 and 15A18. Both these terms are primary author indexing terms, for they describe the most important concepts in the article.

An author also may assign terms covering the secondary aspects of an article. There is no limit to the number of either type assigned by an author. According to the primary author indexing terms, the most important concepts in the Friedland article are norms of matrices and eigenvalues. Note that there is some disagreement between the author and *MR* on the content of this article. Only the *MR* editor assigned the indexing term for approximation theory; only the author assigned the term for eigenvalues.

## Methodology of the Comparative Study

The present study examined indexing via the creation of two simulated databases: one based on *MR* indexing; the other on author indexing. The two databases consisted of indexing terms for the same 157 articles and were

tested by the same 138 queries. The investigator used articles from the 1975 issues of the *Bulletin, Proceedings,* and *Transactions* of the AMS. He included only articles written in English, each no more than 20 pages long, and represented in the 1975, 1976, 1977, or 1978 *MR* author index. This created a pool of 1,109 articles.

After a cursory examination of an article, the investigator assigned it to one of seven broad categories: algebra and theory of numbers, analysis, applied mathematics, mathematical logic and foundations, geometry, topology, and statistics and probability.

Queries for testing the databases came from faculty and graduate students of the University of Illinois at Urbana-Champaign Mathematics Department. There were 85 such readers: 54 faculty and 31 students. Readers listed one or more of the seven categories as an indication of their areas of expertise. For the major part of the study, each reader examined two articles. The investigator extracted from the article pool the articles to be read by randomly selecting articles that were in the same broad category as the reader's expertise. Attempting to satisfy the interests of readers from a predetermined collection of articles sometimes compromised the randomness of article selection. For example, if a participant was not satisfied with the first set of articles received, it was necessary to select at least one replacement article for that reader.

Most readers participated fully, each examining two articles, but a few volunteered to process only one document. Each of the 157 articles was examined by at least one reader. The reader created a query that was to be related to an important aspect of the article and that could be answered satisfactorily by the article. Of the 157 source articles, the readers supplied queries for 138. For the Friedland article, the query was: "How close is matrix B to being a scalar multiple of matrix A?"

Upon receipt of a query, the investigator transformed its concepts into indexing terms taken from the AMS Scheme. The query for the Friedland article reduced to the terms 65F35 and 15A12. Terms associated with a given query became the search terms introduced into the databases for that query. There was a limit of ten search terms per query, because searching took place in a printed tool.

To test how well author and *MR* indexing would perform with these queries, the investigator recorded the author and *MR* indexing terms associated with each article. Then, if at least one search term of a query was identical to at least one author indexing term of the article associated with that query, the investigator concluded that the simulated database had responded successfully to the query under author indexing; the article had been retrieved. A similar rule held for *MR* indexing.

Table 1 includes examples of data used in this search process involving the Friedland article. The author and *MR* indexing terms and the search terms are as noted earlier. Therefore, *MR* indexing, but not author indexing, retrieved the article.

The investigator hypothesized that authors indeed knew their works better than anyone did; he expected that authors would demonstrate better retrieval performance than *MR* by allowing retrieval of a greater number of the 138 articles than would *MR* indexing.

• •

Table 1. Indexing and Search Data for an Article.

| |
|---|
| **Article Title:** "On Matrix Approximations" |
| **Author Indexing Terms:** 15A60, 15A18 |
| **MR Indexing Terms:** 65F35, 15A60, 41A65 |
| **Query:** "How close is matrix B to being a scalar multiple of matrix A?" |
| **Search Terms:** 65F35, 15A12 |

## Constraints

During the study, there was not complete independence between author and *MR* indexing assignments. The investigator did not attempt to prevent *MR* editors from viewing author terms that appeared on the manuscripts. The calculation of results proceded as if the indexing treatments were independent. A similar limitation in a study by Schultz, Schultz, and Orr did not affect seriously the major results there (*8*). Nevertheless, implications from the present study should be tempered by this and other factors. The environment of the study was a single discipline, and the assignment of articles to readers was not always ideally random. There was no account taken of differences among authors and editors concerning their previous experience with indexing and the AMS Scheme. The queries might not have developed from real needs of users, and in addition, only one article could be the successful result of any search.

## Results

### *Retrieval Analyses*

Under author indexing, the searches retrieved 69 of the 138 articles; under *MR* indexing, there also were 69 retrieved articles. Thus, both treatments had recall scores of 0.50 (see Table 2).

The two treatments did not retrieve the same 69 articles. They did agree on the retrieval status of 118 of 138 articles, simultaneously retrieving 59 of them and simultaneously failing to retrieve the other 59. This left 20 disputed articles. Each treatment retrieved 10 articles that the other did not retrieve. The major statistical tool used in the study, a correlated proportions test (*9*), took into account the overall retrieval results for each indexing treatment, as well as how the treatments retrieved or failed to retrieve the disputed articles. There was no surprise here; the similar results for author and *MR* indexing produced a *Z* score of 0.0. There was no significant difference in retrieval performance between author indexing and *MR* indexing.

Yet, the two indexing treatments were not identical. For example, authors assigned a mean 1.87 indexing terms per article; editors assigned 1.47 terms per article. Thirty-four of the 138 articles with queries had at least three author indexing terms; only 13 of the 138 had at least three *MR* terms.

Was this greater depth of indexing for authors an advantage in retrieval performance? Each indexing treatment had higher recall scores for articles with at least three indexing terms than for articles with fewer than three. Author indexing retrieved 72% of the former and 43% of the latter. *MR* indexing retrieved 77% and 47%, respectively. These differences were significant according to Chi Square tests (at 0.90% and 8.45% confidence levels for author and *MR* indexing, respectively). It seemed as if authors and *MR* editors had taken similar advantage of indexing depth. However, *MR* did have a lower mean indexing depth, and only once did *MR* assign more than three terms per article, while 14 authors assigned more than three terms to each article.

If we assume that authors and *MR* editors listed their indexing terms in descending order of importance, an analysis of the results suggests that *MR* editors were using the initially ranked term of each article more effectively than were the authors. Author indexing would have had a recall of only 0.40 if allowed to assign only these initial terms. *MR* would have a recall of 0.44 for the initial terms—the terms used to locate the article abstracts in *MR*. *Z* scores compared these figures with the recall figure of 0.50 for both indexing treatments for all terms, and there was a significant difference in recall for authors (2.22% confidence level) but not for *MR* (11.51%). That is, for *MR* editors, but not for authors, overall retrieval performance would have been the same if each search had employed

the initial indexing term instead of all assigned indexing terms for a given article. Authors did not take advantage of their greater indexing depth.

Analysis of indexing depth led to investigation of search term depth. The searcher assigned a mean 3.90 search terms to each query. Recall under both author and editor indexing (0.65 and 0.69, respectively) was higher for articles associated with queries having exactly three search terms than for articles with more or less than three search terms (for which both author recall and *MR* recall were 0.46). Chi Square tests demonstrated that the three search terms versus the more or less than three terms recall difference was significant only under *MR* indexing (5.0% confidence level).

What would have been the recall results if search/indexing term matching had not required that terms be identical? That is, what portion of the 69 articles not recalled under a given indexing treatment had indexing terms that almost matched search terms? When requiring only that matching terms be in the same subclass (for example, allowing 15A12 and 15A60 to match because they both are in subclass 15A), author recall increased from 0.50 (for perfect matches) to 0.63, and *MR* recall increased from 0.50 to 0.59. Both the increases were significant, according to Z tests (confidence levels at 0.44% and 3.51%, respectively). When requiring only that matching terms be in the same major class (for example, allowing 15A12 and 15B25 to match), author recall increased from 0.50 to 0.76 and *MR* recall from 0.50 to 0.77, both increases being significant at less than 0.10%.

### *Interindexer Consistency*

To complement the retrieval analyses, another part of the study examined the interindexer consistency (IIC) between authors and *MR* editors (see Table 3). The IIC measure for an article was a typical one: the number of indexing terms assigned simultaneously by both indexing treatments divided by the total number of unique indexing terms assigned by the two treatments. For the Friedland article (Table 1),

Table 2. Recall Scores for Author/*MR* Indexing under Various Conditions.

| Indexing Terms per Article | Search Terms per Article | Indexing/ Search Term Matching Conditions* | Author Recall | *MR* Recall | Number of Articles |
|---|---|---|---|---|---|
| All | All | I | 0.50 (a,b) | 0.50 (c) | 138 |
| All | All | C | 0.76 (a,b) | 0.77 (c) | 138 |
| First Only | All | I | 0.40 | 0.44 | 138 |
| At Least Three | All | I | 0.72 (d) | 0.77 (e) | 32 (Author)<br>13 (*MR*) |
| Less Than Three | All | I | 0.43 (d) | 0.47 (e) | 106 (Author)<br>125 (*MR*) |
| All | Three | I | 0.65 | 0.69 (f) | 26 |
| All | More or Less Than Three | I | 0.46 | 0.46 (f) | 112 |

*I—Indexing and search term must be identical for a match to occur.
*C—Indexing and search term must be in the same major AMS class for a match to occur.
Differences between indicated figures are significant at 0.10% level (a,c); 1.00% level (d); 5.00% level (b,f); 10.00% level (e). Tests included Chi Square with Yates' correction (d,e,f) and Z-test (a,b,c).

author/*MR* IIC was 1/4 or 0.25. The mean author/*MR* IIC for 157 articles was 0.42. The readers provided a third indexing treatment, for most of them also assigned indexing terms, although no reader supplied both a query and indexing to the same article. This permitted comparisons of IIC's. Author/*MR* IIC was significantly greater than both author/reader IIC (0.26 for 144 articles) and *MR*/reader IIC (0.28 for 142 articles).

Author/*MR* IIC was relatively high. Further analysis emphasized this. By considering only the major classes of indexing terms (so that, for example, 10A15, 20E05, 20N25, 10A45 reduced to the major classes 10 and 20), author/*MR* IIC increased from 0.42 to 0.78. Similarly, by reducing all indexing terms to one of the seven broad categories noted earlier, 151 of the 157 articles had at least one indexing term of the same category assigned by both author and *MR*. However, IIC was far from the perfect score of 1.0, when one considered the 0.42 result obtained for actual indexing terms assigned by authors and *MR*.

Whether or not *MR* editors saw the author indexing terms, editors in 120 of 157 cases did assign to the articles a collection of indexing terms not identical to that assigned by the author. For these 120 articles, there were two major means of disagreement: 1) the assignment of different numbers of indexing terms for a given article by the author and by *MR*; this occurred in 90 of 120 cases, and for 63 articles the author assigned the greater number of terms; 2) the assignment of different indexing terms by the author and by *MR* for a given article so that author and *MR* agreed only on a major AMS class number without agreeing on some subclass letter/subsubclass number combination; this situation occurred in 60 of 120 cases, as with the article for which the author assigned 02B25, 68A30, 94A30, while *MR* assigned 02F10, 68A30, 68A25. (The disagreement was in the assigning of class 02.) Still, for the readers and their queries, the retrieval results indicated that changes made by the *MR* editors had little effect on the retrieval performance simulated in this study.

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Table 3. Author/*MR* Interindexer Consistency for 157 Articles.

| | |
|---|---|
| Author/*MR* interindexer consistency for complete indexing/search terms | 0.42 |
| Author/*MR* interindexer consistency based on AMS major class numbers | 0.78 |
| Articles for which author and *MR* assigned indexing terms from at least one common broad category | 151 of 157 (96.2%) |
| Articles for which author and *MR* assigned indexing terms that were not all identical | 120 of 157 (76.4%) |
| Articles for which author and *MR* indexing terms were not identical and for which author and *MR* assigned different numbers of indexing terms | 90 of 120 (75.0%) |
| Articles for which author and *MR* indexing terms were not identical and for which author and *MR* assigned the same AMS major class number but not the same subclass letter/number | 60 of 120 (50.0%) |

## Implications

The major finding of this study was that retrieval performances of authors and *MR* editors were comparable under the given experimental conditions, which included the use of a limited collection of articles chosen from three journals in mathematics, the absence of complete independence between author and *MR* indexing assignments, and the use of simulated queries.

These results suggest that author indexing is a viable device for the subject control of documents. In addition to the applications noted earlier, there are roles for author indexing in electronic publication, automatic indexing, and automated information retrieval.

The electronic journal may well succeed in lessening the distinction between the primary and secondary literature of a field. Electronic journal authors can input their documents directly into a system which provides access to those documents and to the associated indexing and abstracting data. Inputting indexing terms at the same time as the author inputs a document permits the speed of subject control to be electronic.

If keywords assigned to articles in any discipline were to produce results similar to those attained here with AMS classification numbers, then keywords supplied as source indexing terms would be useful in automatic indexing systems. Source indexing terms accompanying documents could assist the usual automatic techniques of statistical and linguistic analysis in identifying the important concepts of documents.

A document's representation in an automated information retrieval system (whether or not there are automatic indexing features in the system) could consist of both professional indexer and author-assigned terms. Storage capabilities should permit this, and use of techniques like search coordination should be amenable to the existence of many search terms per document.

## Summary

Author indexing and source indexing terms have been assigned to documents for at least 20 years. These terms can be used in the special library to create indexes and abstracts, to flag articles for processing by current awareness services, and to accompanying articles entered into electronic journals. The existence of author indexing underscores the important responsibilities given to authors. As demonstrated in a study of the AMS author indexing program, authors have not only a responsibility but also an opportunity to provide useful clues to the content of their articles. Librarians have an opportunity to assist author/users in assigning indexing terms to documents.

## Acknowledgements

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# Bibliographic Instruction in Business Libraries

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■ **Recent articles have discussed the business student's lack of skill in using the library and the need for librarians and teaching faculty to become involved in preparing these future business leaders to do library-centered research. A survey of 120 academic libraries was conducted to identify useful and effective bibliographic instruction methods. Nearly 50% of the respondents to the survey questionnaire felt that teaching library use in connection with a regular course in the curriculum was the most effective method of library instruction. Of those responding, 88% of the libraries are using this method.**

Many articles during the past ten years have pointed out the business student's lack of library research skills and the failure of business schools and faculty to make this a part of the business curriculum. Little, however, has been written on successful methods or programs to improve this situation. Yet during this same period, librarians have increased their efforts to improve bibliographic instruction in both the library and the classroom.

With little or no introduction to the library, the business student, when required to use it for his class assignments, is left to "sink or swim" (*1*). Most likely the student will become frustrated and discouraged and develop a poor attitude regarding the library and its benefits. Graduation does not change this situation. New graduates, as they enter the business world, will continue to be handicapped in their ability to acquire information and data. Their lack of research skills and negative attitude toward libraries will cause them to miss the valuable and free information available in public, university, and corporate libraries. This may result in managerial decisions made on the basis of inadequate knowledge, or the purchase of information from commercial sources. As Bruner and Lee

point out "... the real inadequacy is not only theirs [the students] for not knowing where or how to obtain the needed information, but ours, the business educators for never having placed the proper emphasis upon the business library and the skills needed to use it in graduate and undergraduate business programs" (*1*, p. 293).

## Background

Three surveys of different business student populations point out students' lack of knowledge about the library and their attitude toward it. Bruner and Lee tested undergraduates' knowledge of basic library sources and the students' attitude toward the library (*2*). They found that over 50% of the students were unable to list one index or abstract with which they had any familiarity. Sixty-two percent were unable to indicate a suitable source for obtaining information on any of six specific subjects. However, most (68%) agreed that the business library plays an important role in the education of business students, and 67% felt that a one-hour course introducing the business library would be worthwhile.

A similar study of graduate business students was conducted in 1972 by Lee and Read (*3*). They found that graduate students seemed to be better prepared to use the library than were undergraduates, but that both their levels of knowledge were inadequate. Forty-eight percent of the graduate students could not list one index or abstract they knew how to use well, and 25% could not indicate a single suitable source for obtaining information on any of six subjects given.

A third survey, tested both undergraduate and graduate students (*4,5*). The results were similar: over 10% of both graduate and undergraduate students claimed they had never *heard* of *Business Periodicals Index!* Most students felt they needed to know how to use the library for academic success but not for career success. Few did any reading that was not required, and over 50% of the undergraduates and 75% of the graduate students claimed they rarely, if ever, saw a faculty member using the library.

What is being done to improve this situation? Broward (*6*) and Vernon (*7*) describe teaching programs initiated by librarians in academic business libraries. Prompted by Bruner and Lee's article (*2*), Dorothy Eady Brown, College of Commerce and Business Administration, University of Alabama, conducted a brief survey in 1973 of library instruction programs at 138 business schools accredited by the American Association of Collegiate Schools of Business (AACSB). Of the 79 schools that replied, it was found that 58% conducted some form of library instruction, while 42% did not. "Of the responding schools, 43 gave lectures, 19 used tours with instruction, and 15 used both lectures and orientation tours" (*8*).

The author conducted a similar but more detailed survey in the winter of 1977/78 to discover what is presently being done by business libraries, what has proved successful, and what has not.

## Methodology

One hundred and twenty schools were selected by geographical distribution and enrollment size. All but one are members of AACSB. A special effort was made to include all "separate" business libraries listed in the annual *College and University Business Library Statistics Survey.* A "separate business library" is defined as "not part of the main college or university library ... and is further defined as being in a separate building or part of a building with a separate budget and an easily identifiable separate collection of materials" (*9*).

A total of 65 answers was received, including 4 libraries that indicated they would not participate. Thus, the data has been drawn from 61 libraries that completed the questionnaire. Of the 33 separate business libraries, 28 answered with 3 declining to participate.

## Survey Questionnaire

The questionnaire asked for information in four general areas:

1) The business library: location, staff, and size of collection.
2) The business school or department: number of students in undergraduate, and graduate programs, number of faculty, and teaching emphasis.
3) Orientation/instruction methods used by the business library in 1977/78, including printed materials, audiovisuals, lectures by the librarian, separate bibliography classes, and the effectiveness of these methods.
4) Cooperation with the business faculty: involvement in school/department orientation, rating of student and faculty knowledge of library use, and faculty interest in the library.

Answers required numerical values or checking the appropriate response. Several opportunities for comments or evaluation led to longer answers.

## The Business Library

Twenty-eight of the surveyed libraries are located in the same building as the business school or department, while 33 are in the main library building. Of those in the main library, 14% have separate collections, while 86% of the business collections are part of the general stacks. Forty-eight percent of the libraries have only one professional librarian, and over 90% have fewer than six librarians. Only 10% of the libraries employ more than ten clerical assistants, while 77% have five or fewer. The number of student assistants was reported in various ways (absolute numbers, FTE, and so on), but a majority reported ten or fewer student helpers.

The size (total number of volumes) of the libraries varied, from 27% with 20,000 or less, to 4% with more than 200,000 volumes. Over 75% of the surveyed libraries have 80,000 volumes or less. A wide range in the number of periodical subscriptions was also seen, from 43% with 500 or less, to 3% with more than 3,000.

## The Business School/Department

Forty-four respondents indicated that the school or department has an undergraduate program, while 57 have graduate programs. All with graduate programs offer a master's degree, while 29 offer PhDs. Most libraries serve undergraduate business programs of 1,000–5,000 students, master's programs of 100–400 students, and PhD programs with less than 100 students. Over 95% of the respondents indicated that the

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Table 1. Use of Printed Materials for Orientation and Instruction.

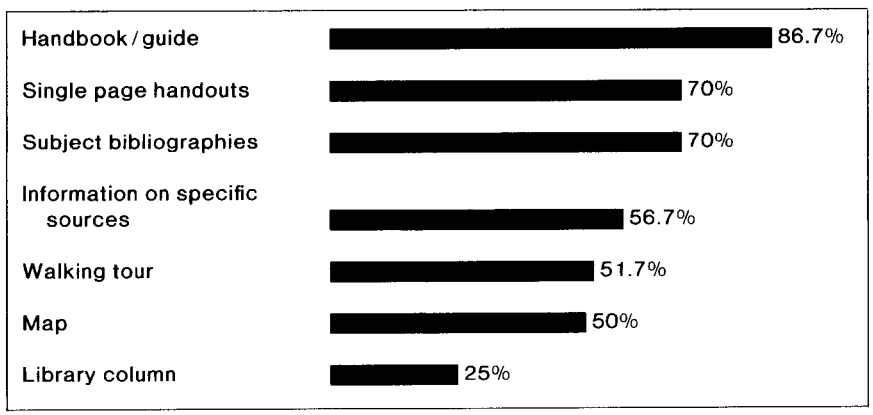
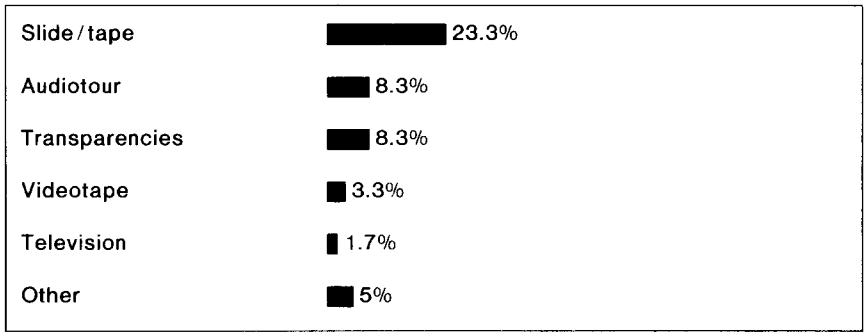


Table 2. Use of Audiovisuals for Orientation and Instruction.




business faculty numbers less than 200, while 70% responded that it numbers under 100.

A question on teaching emphasis was asked to determine if schools using case studies or textbooks had less library orientation, or rated student library knowledge poorer. Since respondents generally checked more than one answer, or indicated that the emphasis varied between classes, such a comparison could not be made.

## Orientation Instruction Methods

In this section of the survey, information on the different kinds of materials and methods used was gathered. Table 1 shows the kinds of printed materials and the percentages of the libraries that use these materials for library orientation or instruction.

Most libraries checked more than one category. The most often used printed materials were handbooks or guides (86%), single page handouts (70%), and subject bibliographies (70%). Of the 52 libraries having handbooks or guides, 38 indicated they had guides for the library system as a whole, while 28 had handbooks for just the business library.

Table 2 similarly shows the types and percentages for the use of audiovisual materials. The most popular audiovisuals were slide/tapes (23.3%), audiotours (8.3%), and transparencies (8.3%). Eighteen percent of the respondents use slide/tapes for orientation, while 13% indicated they use slide/tapes for bibliographic instruction. Other audiovisuals mentioned were library tours and audiotutorials.

Table 3 illustrates the percentage of libraries using lectures and/or a separate bibliography class. Lectures by the librarian are divided into two groups: to new students (orientation), and to classes (instruction). Twenty percent of these lectures are given on a regular basis, while 83.3% are given upon the request of another instructor.

The lectures presented as part of a curriculum course are the most popular form of library-use instruction in the surveyed schools. Sixty-two percent indicated that they present 2 to 10 such lectures a semester. Of the separate bibliography classes, 8.3% are given for credit; 3.3% are required courses; and 5% are elective.

Other types of orientation or instruction listed by the participating libraries included: individual instruction to faculty members (1.7%), open houses and tours (8.3%), lunchtime bibliographic lectures (1.7%), individual instruction (5%), and team teaching (1.7%).

Tables 4 and 5 were prepared from two open questions: Which methods have been most effective, and which least. Lectures to specific classes and printed materials were rated as the most effective. Comparing those libraries that listed these methods as most effective shows a full range in size of collection and undergraduate student population. This differed from those listing tours as most effective since, where data

was available, these libraries are small (less than 80,000 volumes, most under 40,000) and have undergraduate student enrollments of less than 2,000.

Rated least effective were orientation lectures and tours, while one library each listed lectures to specific classes, printed materials, and a separate bibliography course as least effective.

The overall effectiveness of the orientation/instruction methods used by the respondents was rated highly successful by 5% and moderately successful by 58.3%. Thirty percent feel their program needs improvement while 1.7% believe their program is a total failure.

Comments on the effectiveness of these methods indicated a strong feeling that they could be successful only with the business faculty's cooperation. Again, presentations to specific classes tied in with a class assignment were favored. However, this requires a time committment from both librarians and faculty, and often faculty members do not see a need for library instruction in their classes (*10*).

## Cooperation with Business Faculty

Questions in this section were of a subjective nature requesting the respondent to rate the faculty involvement and interest in the business library, as well as the library knowledge of the undergraduate and graduate students and the business faculty.

Well over half (59%) of those responding to the question indicated that the librarian is included in new faculty and student orientation programs. However, only 20 libraries (37%) reported that the business faculty was actively involved with the library staff in bibliographic instruction, particu-

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Table 3. Lectures and Separate Bibliography Classes.

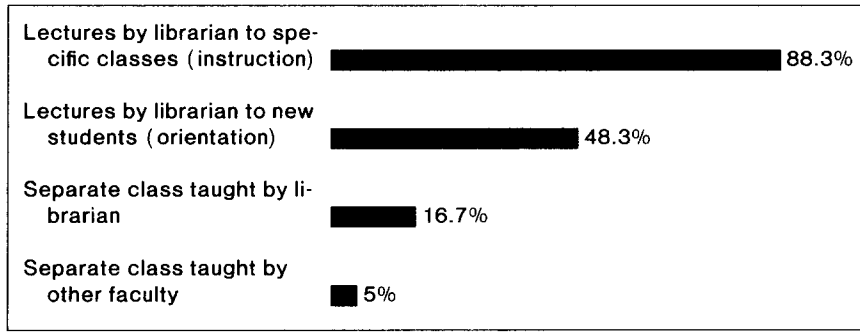



Table 4. Most Effective Methods.

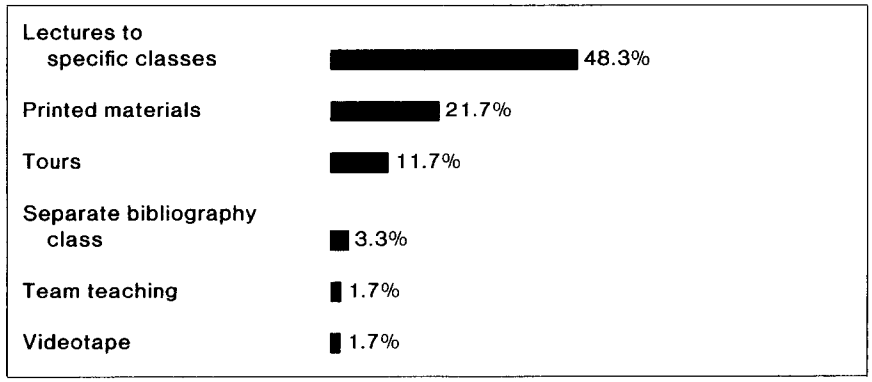
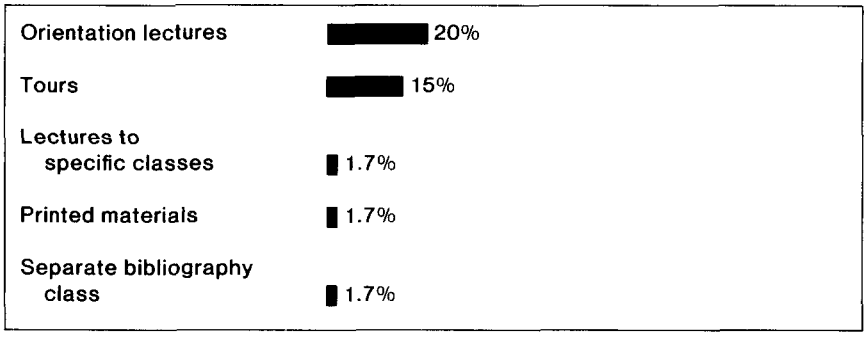


Table 5. Least Effective Methods.




larly in structuring library use assignments. Comments indicated that involvement with the library staff varied greatly among faculties. No one indicated that more than 50% of their faculty consult with the reference staff before making assignments. Many indicated little library use, or a preference for a reserve system where the student has only to ask for the material the professor has gathered or provided.

The involvement of the faculty with the library seemed to have a definite effect on the rating of undergraduate, graduate, and faculty knowledge of library use. The more involved the faculty is in library instruction, the higher its knowledge of library use and that of their students was rated. The respondents' evaluation of library use knowledge among undergraduate and graduate students in their schools is shown in Table 6.

All stated that knowledge of library use varied, but 92% rated undergraduates average or below, and 68% rated graduate students average or below. Comments indicated that many feel graduate, particularly doctoral, and foreign students are quite capable. The reason given was the smaller number of such students, and thus, the opportunity to work with them individually. On the other hand, comments such as the following about undergraduate students support Bruner and Lee's (2) and Culley, Healy, and Cudd's (4) surveys: "Commonly our students require instruction in the use of the simplest library resources"; "In many cases a total lack of library exposure, let alone library training is noted"; "It is a continuous shock to discover just how little students know about the sources of information available to them and the methods of properly using any library, yet alone that of their academic interest."

Some comparisons between methods used and the librarians' ratings of library knowledge can be made. Librarians considering tours most effective, rated undergraduate and graduate students' knowledge of library use as average or below. Institutions favoring a separate bibliography class appeared to have much larger collections and a larger undergraduate enrollment. Librarians there rated undergraduate knowledge poor, and that of graduate students average to poor.

Team teaching (with business faculty) was listed by only one school with a large undergraduate population, but the librarian rated graduate knowledge of library use as excellent. Videotape was listed as most effective at only one school where the undergraduate population was low. However, the librarian rated graduate knowledge of library use as good, and undergraduate knowledge as average.

As shown in Table 7, the faculty members were rated higher in their knowledge of library use, 38.7% rated good to excellent. Comments again indicated a wide variation among individuals, from excellent to very poor.

Some respondents felt there was little understanding. One wrote: "I am continually appalled at some things faculty don't know; I don't think a faculty member should refer to *Business Periodicals Index* as *Reader's Guide to Business Magazines!*" Others were more encouraged: "We have found a good response from younger faculty members, especially new to our campus." Most felt that users could find their way around, but that the nonusers among the business faculty lacked library skills, and thus did not require their classes to use the library.

Seventy-eight percent of the librarians surveyed felt that faculty interest in the business library was moderate to great. Again, great variation was seen among individuals and the subjects they teach; however, many librarians are encouraged by the increasing interest on the part of younger, new faculty members in the library and its use.

## Business Students as Future Corporate Library Users

Business students, the target of bibliographic instruction by academic business libraries, are the future users of corporate business libraries. Corporate libraries are more apt to provide information to a user than expect him to find it unaided. While it is generally thought that little library instruction is done in corporate libraries, this may be simply a difference in terminology. For example, many of the suggestions listed by Strauss in her "Checklist of Suggested Media and Techniques for Public Relations Activities in Special Libraries" are activities included in academic libraries' orientation or instruction programs (*11*).

Sullivan's survey of 1,437 special libraries in Great Britain showed that 78.4% of all respondents (698) gave instruction to their users (*12*). It is interesting to compare similar findings in Sullivan's study to those of this survey of academic business libraries. The most popular and most effective form of instruction reported by the academic libraries was a special lecture requested by a faculty member and given at the time of a particular assignment. Similarly 45% of the special libraries reported that instruction was provided at the specific request of a user. As lectures are often less suitable in a special library, this instruction was probably informal, and individualized. The favored forms of instruction in the British special libraries were a printed guide (28%) and a tour of the library (64%). Academic libraries ranked printed material (21.7%) and tours (11.7%) as the second and third most effective methods, respectively.

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Table 6. Undergraduate and Graduate Student Knowledge of Library Use.

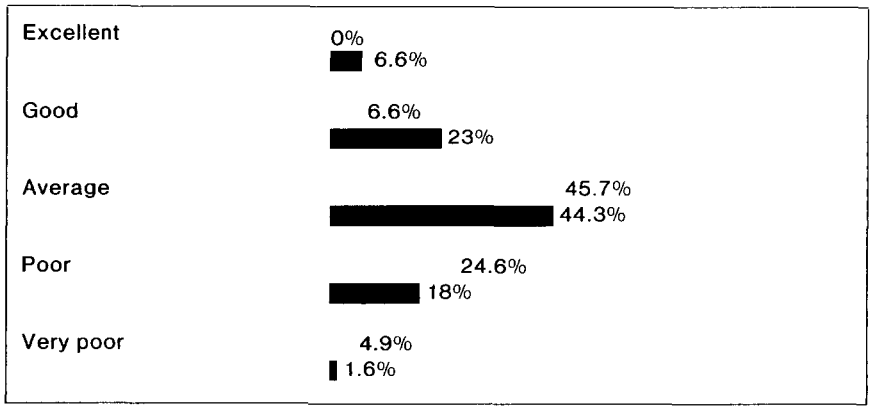
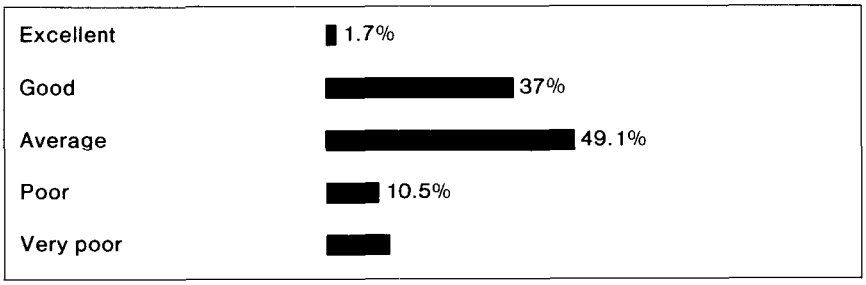


Table 7. Faculty Knowledge of Library Use.




Additional information on user education in corporate libraries, as well as evaluation of the required or expressed library skills of users, would assist in establishing the emphasis academic business libraries should place on library instruction. Some questions to be answered are: What do special librarians expect of their users? Should business leaders learn basic library skills during their educational training? Should special libraries provide user education?

## Summary of Results

The 61 academic business libraries included in the survey reported using a wide variety of orientation and instruction methods, including printed materials, audiovisuals, lectures, and bibliography classes. Methods rated most effective were lectures to specific classes and printed materials. Rated least effective were orientation lectures and tours. Ninety-two percent of the librarians surveyed rated the undergraduate student's knowledge of library use average or below, while 68% rated graduate students average or below. Faculty members were rated higher in their knowledge of library use.

## Conclusions

This survey was, by design, quite subjective and, thus, the ratings of effectiveness of methods used and knowledge of library use have not been thoroughly tested. Bruner and Lee's (2) and Culley, Healy, and Cudd's (4) surveys, however, do show similar low findings on the library knowledge of undergraduate and graduate students.

The success of any library instruction program is naturally dependent on the local conditions, such as student population, library size, and staff availability. Small libraries with low enrollments may find tours and individual instruction still effective and feasible. However, large universities find that other methods must be used to reach a greater number of students with their limited library staffs.

Many libraries are just now developing methods to test the effectiveness of their orientation and instruction programs. From the additional comments on the questionnaires it became evident that tying library instruction to a particular assignment in a regularly scheduled business class is the most effective method. Students see the immediate need for such information and the faculty member can reinforce the future value of such knowledge to the student. However, this form of instruction necessitates cooperation from the business faculty. The librarian can assist by preparing bibliographies, lectures, slide/tapes, and so forth for presentation to the class. The faculty members' advance notification of such assignments can assist the library staff in helping unknowing students learn library search strategies and prepare a better paper.

Although the business libraries surveyed have not used audiovisual methods extensively, most of those who did

had good success. This is an area that more academic libraries are investigating, particularly those faced with reaching a large student population.

Business students may not be better library researchers than in 1971 when Bruner and Lee first conducted their survey, but many academic business libraries are trying to improve business students' library skills. Feedback from corporate librarians can also contribute to the evaluation and further improvement of current bibliographic instruction programs in academic business libraries. The ultimate goal of many academic bibliographic instruction programs is to provide the business student of today with the skills to satisfy his informational needs in the future. Close cooperation between the business faculty and librarians will hopefully improve library skills through library instruction in both the library and the classroom.

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# Online Bibliographic Services

## A Comparison

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■ **A graphic comparison is offered of the commands, costs, and database availability of four online bibliographic retrieval systems: SDC ORBIT, Lockheed DIALOG, Bibliographic Retrieval Services BRS, and Defense Technical Information Center DROLS. Some particular features of the individual systems are also discussed. The command charts were constructed as one horizontal guide to be posted near a terminal for the operator's use. They are not intended as a substitute for manuals or training sessions.**

THERE ARE many online bibliographic search services available to special libraries today. This paper is a comparison of four of these systems by command methods, cost, and database availability. It is not meant as a substitute for manuals or training sessions.

The four charts that follow were constructed to graphically match horizontally across all four examples.

| ORBIT | DIALOG | BRS | DROLS |
|---|---|---|---|
| Access... ----► | Access... ----► | Access... ----► | Access... |

A composite single chart could be posted next to a user terminal as an aid to the multisystem operator. A looseleaf entry book, including the charts and notes, has also been found to be a useful arrangement.

The user of the online bibliographic search system must choose the system based on available databases and cost. With the exception of Defense Technical Information Center DROLS, the only requirement for use is registration with the company (Lockheed DIALOG,* SDC ORBIT, and Bibliographic Retrieval Services BRS), receipt of password, availability of terminal with telephone, and establishment of acceptable payment method. ORBIT, DIALOG, and DROLS are based on monthly billing for actual usage only. BRS requires an annual usage committment; the mini-

*Dialog is now Dialog Information Services, Inc., and is no longer affiliated with Lockheed.

mum subscription is 25 hrs/$750 worth of BRS time plus royalty fees established by each individual database supplier. Defense Technical Information Center (DTIC) DROLS special library users must also be government agencies or government contractors registered with DTIC and have operator and facility SECRET clearance.

The charts created for this paper show the differences in the four systems. Tables 1-4 are the command descriptions comparing the four systems. BRS is directed mainly toward the medical databases; ORBIT is strong in the chemical and patent (Derwent) databases; DIALOG has the largest selection and variety of databases; DROLS is based on DTIC's own government document and R&D databases.

To assist in interpretation of the command charts, the following is offered:

HEADING: DIALOG and ORBIT are West Coast, BRS and DROLS are East Coast; first three are close to 24 hrs/day, DROLS hours are listed; hotline numbers are given.

ACCESS: short description of terminal access methods for getting online; space left so that users may fill in telephone numbers for their areas of the country.

ENTER: how to get into selected database ("n" = number).

BOOLEAN: logic procedure selected determines how subject will be searched by computer on inverted files.

SEARCH: expands (E) or selects (S) logical sequence of input using Boolean logic.

ABBREVIATIONS: AU/TI/DE and so forth are actual usage symbols per online system when user is searching for Author (AU), Title (TI), Descriptor (DE) or Index Term (IT), Language (LA), Organizational Source (OS) or Corporate Source (CS), Update (UP, UD), Journal (JN, JC, PT), Identifier (ID-"Subject" added by indexer outside of standard index lists), Abstract (AB), Contract # or Project # (CN, PN), Report # (RN) and so on. DROLS accesses many more fields and has a numerical access method for each of four separate databases. Only a few examples are given (e.g., "?56 . . . " for Title).

SENTENCE, ADJACENCY, FIELD: special methods for linking terms in logical sequence of words.

LIMIT: methods of "limiting" search, by time period, classification, and so on.

TRUNCATION: methods of truncating terms to scope larger area without multiple inputs.

RANGING: from → to by year or by set, and so on.

STACKING: ability to stack command on one line.

STRATEGY: method of listing search history during session.

SAVE: save-search strategy to be applied to another database or recalled another day.

PRINT: variety of print modes on and offline.

ORDER: method for online ordering of documents themselves.

EXIT: logging off the systems.

Table 5 shows a cost and database availability comparison on three systems; DROLS is based on DTIC files only. The chart is organized into three sections, each containing an abbreviated title of the database followed by per/hour cost and per/offline print cost. Some databases are split into several parts—this is indicated by parentheses (e.g., INSPEC (2)). In some cases there are two prices—subscriber and nonsubscriber. In these cases the higher nonsubscriber price is listed. Subscriber prices require contractual usage committments with database suppliers. Additional price breaks on DIALOG can be gained by signing a usage contract with Lockheed similar to subscription guarantees at BRS. BRS splits its costs two ways: BRS $30/hr + royalty charge based on each database.

Table 1. ORBIT Command Chart.

```
"O R B I T"
To VA: 800-336-3313
To CA: 800-421-7229

ACCESS          DIRECT DIAL   213/828-9141 (30 cps) [HALF DUPLEX]

                TELENET                                   (cr) (cr)
                                                          HALF (cr)
                                                          C 213 33 (cr)
                                                          /LOGIN  password  (cr)
                                                          security code     (cr)
                TYMNET                                    A
                                                          [control H] (cr)
                                                          SDC (cr)
                                                          ORBIT (cr)
                                                          /LOGIN  password  (cr)
                                                          security code     (cr)
ENTER           FILE  name
BOOLEAN         (  )-->NOT-->AND-->OR   (W)or(nW)->(S)->(F)->(L)->(C)or(R)->OR
SEARCH          NBR [Direct "SEL"/SEL 1-3,4,5]          ***DBI***
(SELECT)        NUTS AND ACORNS                  (*1)(W)or(nW)[ADJ] (F)[In Field]
                1 AND 2 AND BEANS;3 AND JELLY      (C)or(R)[In Record]
                PRT SEL [Adds IT to Search Terms] SHOWSELECT [SEL History]
                TFILE [10 minutes]        *CROSSFILE SEARCHING*
                    RETURN (or FILE name)
                /AU
                /TI
                /IT
                /LA
                /OS
                /UP
                /JC
                /ST
                /AB

(SENS)          SENS (S) (*7)
(ADJ)           STRS ;        ;(default TI)  (*1)(W)
(FIELD)         LINK (L)[subfields or subrecords] (*1)(F)
(LIMIT)         /AU TI AB ...

(TRUNCATION)    # [single term/space]  ! [multiple]
(RANGING)       FROM 76-78
                GREATER THAN 76
                LESS THAN 78

(STACKING)      ...; ...! ...
(STRATEGY)      HIS   SHO HIS   SHOWSELECT
(SAVE)          KEEP nnn       SDIPROFILE
                    SAVE       SAVEOLD                  STORE   STOREOLD
                    SAVE name file                      STORE name
                    FINISHED or ERASEALL                FINISHED
                    RECALL name file [executes]         RECALL name
                                                        PURGE name
PRINT           PRT TR [2 postings AU TI IT]
                PRT [5 postings AN TI SO DT LA]   PRT 2 SKIP 3
                PRT FU [1 posting full record]


(SORT)          SORT or SORTD
(OFFLINE)       PRT FU OFF n SORTD AU TI STORAD INDENTED
                KEEP [renumbers sets] KEEP 5-10,11,12 = SS 1-8
ORDER           FILE ORBIT
                ORDER supplier
                (input document request)
                DONE

EXIT SYSTEM     RESTART
                ERASEALL;TIME RESET [SS 1 and new clock in same DB]
                STOP Y

SPECIAL NOTES
                (*1)These new commands only on CAS files;will be added to others
                (*2)"RENAME"  RNM old TO new [to change command name]
                (*3)"SYNONYM"  SYN old TO new [accepts system or new command]
                (*4)"ABORT"  ^ cr  [before you leave line]
                (*5)To override MM msg: use  ; followed by anything
                (*6)AUDIT [shows intermediate postings on all search statements]
                (*7) (S) Not yet available
```

Table 2. DIALOG Command Chart.

```
"D I A L O G"
800-227-1960
415-858-2575

ACCESS          DIRECT DIAL 415/858-2575 (30 cps)  [HALF DUPLEX]
                            415/858-2461 (30 cps)
                TELENET                            cr cr   [FULL DUPLEX]
                                                   cr  or Terminal ID  cr
                                                   C 415 20  or  C 415 48  cr
                                                   password   cr

                TYMNET                             E       [FULL DUPLEX]
                                                   LRS:DIALOG  cr
                                                   password   cr


ENTER           Bn
BOOLEAN         (  )->NOT->AND->OR   [opt. symbols  NOT[-] , AND[*] , OR[+]]
SEARCH          E                                  ***DIALINDEX***
(SELECT)        S       SS
                C


                AU=
                /TI
                /DE
                LA=
                /CS
                /UD
                /JN
                /ID

                CN=
                RN=
(SENS)          (W) or (F)/TI AB
(ADJ)           (W)
(FIELD)         (F)  (L)[multilevel descriptors]   (S)[link subfields]
(LIMIT)         L set#/ ...  LALL/ ...   LALL/ALL [cancells limit]

(TRUNCATION)    ? ?? [single term]  ? [multiple]
(RANGING)       S E6:E10   S PY=1976:PY=1978



(STACKING)      ; command ...
(STRATEGY)      DS
(SAVE)
                END/SAVETEMP or END/SAVE or END/SDI
                    Bn
                    .EXS code
                    .RECALL code
                    .RELEASE code
PRINT           T 7/6/1-2  [Format 6--TI AN]
                T 7/3/1-5 [Format 3--Biblio citation]
                T 7/5 [Format 5--All record]


(SORT)          .SORT 1/2-10/AU/TI
(OFFLINE)       PR 7/5/2-10/AU,TI
                K  [Set or RN]   K-  [Deletes KEEP]
ORDER           .ORDER  supplier   [Orders all items Kept in set 99]
                .ORDERITEM   [DIALOG orders w/n searched DB]
                .LIST
                .REVIEW

EXIT SYSTEM     LOGON
                END
                LOGOFF
                LOGOFF HOLD
SPECIAL NOTES
                (*1) .COST
                (*2) Optional characters for commands: E [*] , S[#] , C[$] ,
                                                       T['] , PR[&] , K[(]
```

Table 3. BRS Command Chart.

```
"B R S"
800-833-4707  800-833-4700
518-374-5011

ACCESS          DIRECT DIAL                          [HALF DUPLEX]

                TELENET                              (cr) (cr)
                                                     Terminal ID (cr)
                                                     HALF (cr)
                                                     C 315 20BR (cr)
                                                     password (cr)
                TYMNET                               A
                                                     [control H] (cr)
                                                     BRS (cr)
                                                     password (cr)


ENTER           File Name
BOOLEAN         (  )-->AND-->OR-->NOT
SEARCH          ..ROOT   [r1 r5-8]                   ***CROSS***[Boolean allowed]
                1 AND 2 OR (BEANS AND CANDY)
                                                          ***OFFLINE SEARCH
                                                          ..SEARCHOFF
                                                          HOLD [reentering later]
                                                          ..PRINT @nnn [Stats]
                .AU.                                      ALL [prints hits]
                NUTS.TI.  NUTS..TI. [neg]  6.TI.
                .DE.
                [Language and Pub Date codes are standard on all DB's]
                .IN.
                .UP.
                .PT.
                .ID.
                .AB.
                CN= or PN=
                RN=
(SENS)          NUTS WITH ACORNS  [same sentence]
(ADJ)           NUTS ADJ ACORNS  [adjacent terms]
(FIELD)         NUT$ AND ACORN$ OR (JELLY ADJ BEANS)
(LIMIT)         AND YR80  or  80.YR. [see DB codes]  ...SDI/ .../EXP=7912

(TRUNCATION)    $1  [single term]  $  [multiple]




(STACKING)      ... / ... / ...
(STRATEGY)      ..DISPLAY [last search statement]  DISPLAY ALL
(SAVE)          ..SAVE ...  [Create your own label]
                    ..EXEC ...
                    ..SEARCH ...
                    ..EDIT ...
                    ..SDI  5 BIBL/ID=SMITH,J/EXP=7912 [expiration SDI DEC79]
                ..PURGE ALL    ..PURGE 3 [only one set]
PRINT           ..PRINT 5 BIBL/DOC=1  [1 biblio citation AU TI SO AB]
                ..PRINTOFF 5 BIBL/DOC=ALL/ID=SMITH,J/SORT=AU
                ..MERGE @nnn,@nnn   [Offline orders merged for printing]




EXIT SYSTEM     END
                ..CHANGE/ERIC  [new DB]
                ..OFF

SPECIAL NOTES
                (*1)ACCT  [Special DB to let you keep cost and DB usage record
                        online plus mailing address and billing address]
                (*2)..MERGE and ..PRINTOFF and ..SEARCHOFF capabilities are
                        unique to this system.
```

Table 4. DROLS Command Chart.

```
"D R O L S"
202-274-7709  or  202-274-7251  or  800-336-5013
8:30 - 8PM EST

ACCESS          DIRECT DIAL  202/274-8878          [HALF DUPLEX]
                             202/274-9685          ES.....  (cr)



                TYMNET                             E
                                                   @2STINFO  (cr)
                                                   DROLSTYM  (cr)
                                                   ES.....   (cr)
                                                   account#  (cr)
                                                   password  (cr) (cr)

BOOLEAN         NOT-->AND-->OR
(SEARCH)        NUTS              @STR@                      @RSQ@ } recall
                AND               @SRTAB@ } search           @RQQ@ } cmds
                ACORNS            @SPP@    cmds
                NOT               @SWU@
                JELLY             @SCF@
                END
AU              ?11BROWN RD
TI              ?56TITLE IS FIVE WORDS    ?55 [1,4,3,2,2]   [filler=*]
                ?60  [free text searching;punctuation=space]

                ?02[6 digit code from Source Header List]


AB              ?60
CN=             ?16F3360779C0087
RN=             ?51MTR1116
(SENS)          @STR@ followed by a @SRTAB@

                                                                    @STR@...
(LIMIT)         NOT                                                 @QSR@
                ?58S (or ?58C or ?58R limits to (U)                 11 GE YYMMDD
(TRUNCATION)    % [min=2]   * [Indicates top of hierarchy]    # [Weighted Term]
(RANGING)       [Table 3-3 for "AD" Ranges] (ADA000001-ADA017003) [CY1975]
                GT GE LT LE EQ NE   3JN78 keyed as 780603
                                    @QSR@
                                    11 GE 780603
                                    END

(STRATEGY)      @LSR@  @LQR@  @LUF@  @RQS@  @RSQ@
(SAVE)          [SDI]


PRINT           2F [cataloguing data with abstract]  @DSR@   @DTR@(1 AD) @DPP@
                3F [cataloguing and text]            15 (contract #)
                1F [all record]                      14 (Rpt #)
                    Y [1 item]                       6 [TI]
                    W [continuous]                   10 (Pers AU)
                    1/10W [first 10]                 1 [or @LSR@] (AD #)
SORT            @SOQ@       AEND  [Alphabetic sort]


ORDER           @OSR@ or @OQR@   @TAB          @OWU@    @EB@   [Erase]
                TR6000 [Bib-1]   AD700809       850      (Last 6 of File ID)
                TR3061 [Paper]   END (cr) (cr)  T0003    (cr) (cr)
                TR3062 [MF]      END (cr) (cr)  END       SCN (#)
                END (cr) (cr)    @OUF@                   (cr) (cr)
                [RCL 1 (*4)]     TR3061 (*2)
EXIT SYSTEM     (SHIFT followed by Underline Key) or @TERM@


SPECIAL NOTES
                (*1)This System only available to Government agencies and
                    registered contractors.
                (*2)Direct order of an "AD" document.
                (*3)Interrupt search with CNTL Key followed by X.
                (*4)RCL 1=(U)Biblio which includes ALL hits;sanitized versions.
```

Table 5. Cost and Database Availability Comparison.

| SDC ORBIT | | | Lockheed DIALOG | | | BRS | | |
|---|---|---|---|---|---|---|---|---|
| DATABASE | $ | OLP | DATABASE | $ | OLP | DATABASE | $ | OLP |
| ACCTNTS INDEX | 65 | .10 | | | | | | |
| ADSEARCH | -- | -- | | | | | | |
| AGRICOLA | 35 | .06 | 10 AGRICOLA (2) | 25 | .05 | AGRICOLA | 30 | .10 |
| | | | 9 AIM/ARM | 25 | .10 | | | |
| | | | 38 AMERICA | 65 | .15 | | | |
| APILIT | 85 | .20 | | | | | | |
| APIPAT | 85 | .20 | | | | | | |
| | | | 45 APTIC | 35 | .10 | | | |
| | | | 112 AQUACULTURE | 35 | .15 | | | |
| | | | 116 AQUALINE | 35 | .30 | | | |
| | | | 44 AQUATIC SCI | 47 | .20 | | | |
| | | | 56 ARTBIB | 60 | .15 | | | |
| ASI | 90 | .25 | 102 ASI | 90 | .15 | | | |
| BANKER | -- | -- | | | | | | |
| | | | 96 BHRA FLUID | 65 | .15 | | | |
| BIOCODES | 35 | .10 | | | | | | |
| | | | 88 BIOGRAPHY | 55 | .15 | | | |
| BIOSIS(69-P) | 65 | .10 | 5 BIOSIS PREV(77-P) | 49 | .15 | BIOSIS PREV | 50 | .10 |
| | | | 55 BIOSIS PREV(69-76) | 49 | .10 | | | |
| | | | 137 BOOK REV INDEX | 55 | .15 | BOOKSINFO | 45 | |
| CAS (3) | 60 | .12 | 2 CA (4) | 70 | .20 | CA SEARCH | 60 | .18 |
| | | | | | | CA TRAINING | 8 | |
| COLD | 65 | .15 | | | | | | |
| | | | 50 CAB ABSTRACTS | 35 | .25 | | | |
| CBPI | 75 | .10 | | | | | | |
| CHEMDEX | 60 | .12 | 31 CHEMNAME | 70 | .20 | | | |
| CIN | 70 | .10 | 19 CHEM IND NOTES | 60 | .20 | | | |
| | | | 30 CHEMSEARCH | 55 | .20 | | | |
| | | | 130 CHEMSIS (2) | 70 | .20 | | | |
| | | | 64 CHILD ABUSE | 35 | .10 | | | |
| | | | 410 CHRONOLOG | 15 | .15 | | | |
| CIS | 90 | .25 | 101 CIS | 90 | .20 | | | |
| | | | 23 CLAIMS (50-62) | 95 | .15 | | | |
| | | | 222 CLAIMS/CITATION | 95 | $50 | | | |
| | | | 24 CLAIMS (4) | 95 | .10+ | | | |
| | | | 223 CLAIMS (3) | 300 | .15 | | | |
| CNI | 55 | .10 | | | | | | |
| COMPENDEX | 65 | .10 | 8 COMPENDEX | 68 | .28 | | | |
| CDI | 55 | .12 | 35 COMP DISSERTATION | 55 | .12 | DISS | 45 | .10 |
| CONF PAPERS | 75 | .15 | 77 CONF PAPERS | 73 | .20 | | | |
| CRECORD | 105 | .15 | 135 CONGRESSIONAL REC | 75 | .15 | | | |
| CRDS | Derwent | | | | | | | |
| | | | 60 CRIS/USDA | 40 | .10 | | | |
| | | | 100 DISCLOSURE | 60 | $5 | | | |
| | | | 103 DOE ENERGY | 35 | .15 | DOE | 36 | .10 |
| | | | | | | DRG/ALCOHOL | 35 | .15 |
| EBIB | -- | -- | | | | | | |
| | | | 90 ECONOMIC AB. | 65 | .20 | | | |
| | | | 22 EIS | 90 | .50+ | | | |
| ELCOM | 45 | .10 | | | | | | |
| | | | 114 ENCY OF ASSN | 55 | .15 | | | |
| ENERGYLINE | 90 | .20 | 69 ENERGYLINE | 90 | .20 | | | |
| ENVIROLINE | 90 | .20 | 40 ENVIROLINE | 90 | .20 | | | |
| | | | 68 ENVIR BIB | 60 | .15 | | | |
| EPIA | -- | -- | | | | | | |

(continued)

Table 5 (continued).

| SDC ORBIT | | | Lockheed DIALOG | | | BRS | | |
|---|---|---|---|---|---|---|---|---|
| DATABASE | $ | OLP | DATABASE | $ | OLP | DATABASE | $ | OLP |
| ERIC | 35 | .08 | 1 ERIC | 25 | .10 | ERIC | 30 | .10 |
| | | | 54 EXCPTL CHILD | 25 | .10 | EXCL CHILD | 35 | .125 |
| | | | 72 EXRPT MED (3) | 65 | .20 | | | |
| FEDEX | 90 | .20 | 20 FED INDEX | 90 | .20 | FEDEX | 30 | .10 |
| FEDREG | 105 | .25 | 136 FEDREG | 75 | .20 | | | |
| FOREST | 80 | .25 | | | | | | |
| FSTA | 65 | .12 | 51 FSTA | 65 | .15 | | | |
| | | | 79 FOODS ADLIBRA | 55 | .10 | | | |
| | | | 105 FOREIGN TRADE | 45 | .25+ | | | |
| | | | 26 FOUND. DIR | 60 | .30 | | | |
| | | | 27 FGRANTS | 60 | .30 | | | |
| | | | 59 FROST/SULL DM2 | 90 | .25 | | | |
| | | | 58 GEOARCHIVE | 70 | .20 | | | |
| GEOREF | 75 | .20 | 89 GEOREF | 65 | .20 | | | |
| | | | 66 GPOMC | 35 | .20 | GPOMC | 30 | .10 |
| GRANTS | 60 | .35 | 85 GRANTS | 60 | .30 | | | |
| | | | | | | HEALTH | 10 | .10 |
| | | | 39 HISTORY AB | 64 | .15 | | | |
| INFORM | 65 | .10 | 15 INFORM | 65 | .10 | INFORM | 65 | .30 |
| | | | 123 INPADOC | 95 | .20 | | | |
| INSPEC (2) | 45 | .10 | 12 INSPEC (2) | 70 | .20 | INSPEC | 60 | .20 |
| | | | 74 INTL PHARM | 50 | .15 | | | |
| | | | 76 IRL-LS | 45 | .15 | | | |
| ISMEC | 65 | .12 | 14 ISMEC | 73 | .20 | | | |
| LABORDOC | 75 | .15 | | | | | | |
| | | | 80 LABSTAT | 45 | .15 | | | |
| | | | 36 LANGUAGE | 55 | .15 | | | |
| | | | 150 LEGAL | 90 | .20 | | | |
| LIBCON(MARC) | 120 | .25 | | | | | | |
| LISA | 50 | .10 | 61 LISA | 50 | .10 | | | |
| | | | 47 MAGAZINE | 75 | .20 | | | |
| MANAGEMENT | 65 | .10 | 47 MANAGEMENT | 70 | .15 | MANAGEMENT | 65 | .15 |
| | | | | | | MEDLARS | 10 | .10 |
| | | | | | | MEDOC | 35 | .10 |
| | | | 154 MEDLINE | 35 | .15 | | | |
| | | | 86 MENTAL HEALTH | 03 | .10 | | | |
| METADEX | -- | -- | 32 METADEX | 80 | .12 | | | |
| | | | 29 METEOR | 95 | .15 | | | |
| | | | 71 MLA BIB | 55 | .15 | | | |
| MONITOR | -- | -- | | | | | | |
| | | | | | | MSGS | 30 | |
| | | | | | | NAL SERIALS | 30 | |
| | | | | | | NARIC | 30 | .15 |
| | | | 78 NATL FOUND. | 60 | .30 | | | |
| NSPR | 80 | .15 | 111 NATL NSPR | 75 | .20 | | | |
| | | | 21 NCJRS | 35 | .15+ | | | |
| | | | 211 NEWSEARCH | 95 | .20 | | | |
| | | | | | | NIMH | 30 | .10 |
| | | | 46 NICEM | 70 | .20 | | | |
| | | | 70 NICSEM/NIMIS | 35 | .10 | NIMIS | 30 | .10 |
| | | | 118 NONFERROUS | 45 | .25+ | | | |
| NTIS | 45 | .08 | 6 NTIS | 40 | .10 | NTIS | 30 | .10 |
| | | | | | | NY TIMES | -- | -- |

Table 5 (continued).

| SDC ORBIT | | | Lockheed DIALOG | | | BRS | | |
|---|---|---|---|---|---|---|---|---|
| DATABASE | $ | OLP | DATABASE | $ | OLP | DATABASE | $ | OLP |
| OCEANIC | 55 | .10 | 28 OCEANIC | 73 | .20 | | | |
| | | | 204 ONTAP (3) | 15 | -- | | | |
| | | | 49 PAIS | 60 | .15 | PAIS | 50 | .15 |
| PAPERCHEM | 110 | .15 | | | | | | |
| USPATENTS/USCLASS | -- | -- | | | | PATSEARCH | -- | -- |
| P/E NEWS | 95 | .11 | | | | | | |
| PESTDOC | Derwent | | | | | | | |
| | | | PHARM | 90 | .20 | PHARM | 80 | .20 |
| | | | 57 PHILOSOPHERS | 55 | .15 | | | |
| | | | 48 PIRA | 55 | .15 | | | |
| POLLUTION | 65 | .15 | 41 POLLUTION | 73 | .20 | POLLUTION | 65 | .20 |
| | | | 91 POPULATION | 55 | .10 | | | |
| | | | | | | PRE-MED | 30 | .10 |
| PROMPT | 90 | .50 | 16 PTS PROMPT | 90 | .20 | PROMPT | 90 | .20 |
| | | | 98 PTS (7) | 90 | .20 | | | |
| PSYCH | 60 | .10 | 11 PSYCHINFO | 65 | .10 | PSYCH | 60 | .10 |
| QUEBEC | 85 | .10 | | | | | | |
| | | | 95 RAPRA | 65 | .15 | | | |
| | | | 97 RILM | 65 | .15 | | | |
| RINGDOC | Derwent | | | | | | | |
| SAE | 80 | .15 | | | | | | |
| SAFETY SCI | 75 | .15 | | | | | | |
| | | | 94 SCI (2) | 130 | .20 | SCI | 120 | .10 |
| | | | SCI | 120 | .25 | | | |
| | | | 117 SELECTED WATER | 45 | .15 | | | |
| SSCI | 65 | .10 | 7 SOC SCI | 70 | .10 | SSCI | 65 | .13 |
| | | | 37 SOC AB | 55 | .15 | | | |
| SPORT | 70 | .15 | | | | | | |
| SSIE | 110 | .25 | 65 SSIE | 78 | .20 | SSIE | 60 | .20 |
| | | | 87 SPECIAL EDUC | 65 | .15 | | | |
| | | | 62 SPIN | 35 | .10 | | | |
| | | | 132 STD & POORS NEWS | 85 | .15 | | | |
| | | | | | | STATEPUBS | 50 | .20 |
| | | | 115 SURFACE CTGS | 65 | .15 | | | |
| TITUS | 75 | .15 | | | | | | |
| | | | 106 TRADE (2) | 45 | .25+ | | | |
| | | | 63 TRIS | 40 | .10 | | | |
| | | | 52 TSCA | 45 | .15 | | | |
| TULSA | +125 | .50 | | | | | | |
| USCA(CBD) | 85 | .15 | | | | | | |
| | | | 126 US EXPORTS | 45 | .25+ | | | |
| US POL SCI | 65 | .15 | 93 US POL SCI | 65 | .15 | | | |
| | | | 120 US PUBLIC SCHOOL | 35 | .10 | | | |
| VETDOC | Derwent | | | | | | | |
| VOTES | -- | -- | | | | | | |
| | | | 99 WELD | 65 | .15 | | | |
| | | | 33 WORLD ALUM | 50 | .10 | | | |
| | | | 67 WORLD TEXTILES | 55 | .10 | | | |
| WPI | Derwent | | | | | | | |
| DBI | 45 | .25 | 411 DIALINDEX | 35 | -- | CROSS | 30 | |
| | | | 200 DIALOG PUBS | 15 | -- | | | |

The prices listed for BRS are the combined fees based on the smallest subscription committment. All quoted prices in Table 5 are based on maximum cost/database/system.

In addition these observations can be made:

- The COST command and continuous accounting capacity online with DIALOG is helpful in tracing complicated search charges back to originators. ORBIT has this feature under consideration at present and expects to add it to its system. BRS takes this one step further with its ACCT file for each user. This keeps a running tally of database usage throughout the month and can be accessed online at any time. DTIC charges are $20/hr against NTIS deposit accounts.
- The print capacity on ORBIT and DROLS is more flexible than DIALOG (i.e., each part of the record may be chosen separately to format the posting printout). The command format on DIALOG is easier to input once learned (i.e., less characters required). No STORAD (stored address) is necessary on DIALOG. It would be helpful to have STORAD capacity on DROLS. BRS has billing and mailing addresses stored on ACCT file automatically (can be edited if necessary).
- The new PRINT SELECT and TFILE commands on ORBIT make cross-file searching a possibility (new Boolean operators and these commands are now only in CAS files). DIALOG and BRS do not yet have the ability to temporarily go to another database and then return to original point in first search strategy. The main use expected for these new commands is in the chemical files for which a compound identification number is often required to complete a search strategy. All three systems have cross-database comparison files: SDC "DBI," DIALOG "DIALINDEX," and BRS "CROSS." "CROSS" and "DIALINDEX" can be searched with careful use of Boolean operators. DBI must be searched with NBR command. However, the new direct retrieval from NBR ("SEL") expands the user's ability to create multiple search strategies with little input time required.
- The unique offline searching (. . SEARCHOFF) and printing (. . PRINTOFF and . . MERGE) commands on BRS allow lengthy searches to be initiated one day and returned to the next. They then can be edited, have the multiple database results "merged," and then printed online or offline. Alternatively the search could be automatically mailed when finished. This method could be a cost-effective feature.
- The DTIC DROLS system is a fantastic breakthrough for government contract work. It cuts the time factor for securing information, which is critical in this kind of work, and makes inaccessible information accessible. The main drawback for the operator on DROLS is the single line entry method and the double-carriage-return transmit. Once this is overcome, one can appreciate the speed of computer response and the infinite variety of search fields available. Any special library working on government contracts should consider this system.

The online systems today are a boon to libraries and library users everywhere. It is not necessary to depend on one system, but it would be helpful to have some standardization to improve operator efficiency. This seems to be the direction of the future.

For further information on these systems contact the following:

DIALOG Information Services, Inc.
3460 Hillview Ave.
Palo Alto, CA 94304
800/227-1960 or 800/982-6689 (CA)

System Development Corporation (SDC)
2500 Colorado Ave.
Santa Monica, CA 90406
800/421-7229 or 800/352-6689 (CA)

Bibliographic Retrieval Services, Inc.
Corporation Park, Bldg. 702
Scotia, NY 12302
518/374-5011 or 800/833-4708

Defense Technical Information Center
Attn: DTIC-2 Defense RDT&E On-Line System
Cameron Station, Alexandria, VA 22314
202/274-7709

If the reader would like a copy of the command charts presented herein, please send a self-addressed stamped envelope to the author at the following address: E-Systems, Inc., ECI Division, 1502 72nd St., N., St. Petersburg, FL 33733.

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# Cooperation among Special Libraries at the International Level

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■ **At the international level, special questions arise regarding direct and indirect cooperation among special libraries. As examples of the possibilities for effective cooperation, including bilateral agreements between official and unofficial bodies, an overview is given of the special library situation in Germany and Brazil. The priorities for supplying literature in specialized fields and for information retrieval are considered. In addition, the activities and working methods of special libraries and their economic aspects are surveyed tracing the sources of information and its use. Consideration is also given to the political impact of different types of cooperation among special libraries.**

The state of the art of information science and documentation is changing worldwide. Formerly, bibliographies and abstract journals were the chief sources of information to international clients about new publications within their disciplines. Now, data banks have joined these media and partially replaced them in many areas. Complex searches can now be handled quickly with the help of data processing. The provision of information services has also changed. Formerly, such services had been compiled centrally using scientific literature gathered from around the world. Today a philosophy is spreading which gives priority to decentralized literature abstracting combined with central storage and decentralized access to central data banks or to regional mediating data banks.

This development also affects special libraries. Cooperation among special libraries in the same field will have to intensify, not only at the national level but also at the international level. This is self-evident in countries where

special libraries have an established tradition and, therefore, maintain close contacts among themselves. It will become more apparent in countries where special libraries have developed only recently and are trying to achieve international standards of development with the help of well-equipped special libraries in other countries.

The possibilities for direct and indirect cooperation can be seen in the example of libraries in Germany and Brazil. Before examining their activities and working methods, it is necessary to consider and compare the general situations of special libraries in both countries, as well as to investigate the tendencies for various types of cooperation in selected subject areas.

## Library Associations in Germany and Brazil

In spite of a history going back to the 19th century, established associations of special libraries have only existed in Germany since World War II. In 1945, the so-called Arbeitsgemeinschaft der Spezialbibliotheken (ASpB) was formed. Modeled after Aslib, with a core of libraries from the technical, scientific, and economic fields, ASpB deals with the methods of work and practical concerns common to special libraries and serves as an umbrella association for all subject-oriented library associations in the Federal Republic of Germany.

Subject-oriented library associations in Germany also have developed only during the last decades. They are loosely organized and address the specific concerns of libraries working within their disciplines. These library associations include the following:

- Arbeitsgemeinschaft für das Archiv-und Bibliothekswesen in der evangelischen Kirche;
- Arbeitsgemeinschaft katholisch-theologischer Bibliotheken;
- Arbeitsgemeinschaft für juristisches Bibliotheks- und Dokumentationswesen;
- Arbeitsgemeinschaft der Kunstbibliotheken;
- Arbeitsgemeinschaft für medizinisches Bibliothekswesen;
- Arbeitsgemeinschaft der Parlaments- und Behördenbibliotheken;
- Gesellschaft für Bibliothekswesen und Dokumentation des Landbaues.

These subject-oriented library associations hold conferences separately or jointly with other German library and documentation associations. There also are separate documentation associations in the Federal Republic of Germany. These include:

- Deutsche Gesellschaft für Dokumentation;
- Deutsche Gesellschaft für medizinische Dokumentation und Statistik;
- Verein Deutscher Dokumentare.

Seen from the point of view of their tasks and aims, particularly close relations exist between documentation associations and special library associations. In addition, there are a number of supraregional library associations, including:

- Deutscher Bibliotheksverband, with a section for special libraries;
- Verband der Bibliotheken des Landes Nordrhein-Westfalen;
- Verein der Bibliothekare an Öffentlichen Bibliotheken;
- Verein Deutscher Bibliothekare;
- Verein der Diplom-Bibliothekare an wissenschaftlichen Bibliotheken.

There are also several library associations in Germany which operate on a regional level and independent of each other.

In Brazil, the development of library associations has taken another direction. Separate library associations exist in the individual Brazilian states; for instance:

- Associação dos Bibliotecários de Minas Gerais;

- Associação Paulista de Bibliotecários;
- Associação Riograndense de Bibliotecários.

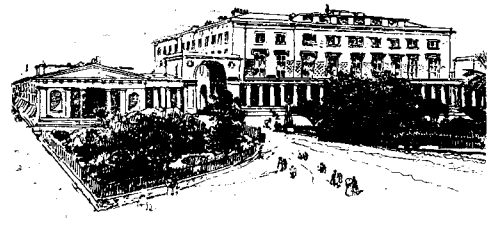
These regional associations are combined within the Federação Brasileira de Associações de Bibliotecários. Working groups have been created to handle questions concerning specific disciplines, above all in the field of documentation. Their task is also to promote cooperation among the respective special libraries and to inform their members about new developments in library procedures and methods.

It is interesting to note that in Brazil an organizational split between librarianship and documentation is not so distinguishable because Brazilian special libraries adopted documentation working procedures from the beginning and integrated them in the education and training of librarians.

The subject areas of the various associations, which shall be treated more fully and be used for comparison regarding the situation in Brazil and in Germany, include biomedicine, agriculture, law, and sports. International cooperation is not yet highly developed among national library associations; instead, their primary emphasis has been on resolving internal problems. Library associations, after all, are member associations whose interests are first and foremost in fostering cooperation among themselves; the effects of the associations' work on the outside are more neglected. Yet even here, one can find general points of cooperation among these library associations and those of other countries which may have valuable results for the future.

Participation in library conferences by representatives of foreign library associations is a valuable way for participants to gain information about the specific conditions and problems of librarianship in other countries. For example, in 1977 the chairman of the ASpB was invited by the Associação Riograndense de Bibliotecários (ARB) to take part in the Ninth Brazilian Congress for Librarianship and Documentation, an event noteworthy for its excellent offering of continuing education seminars led by international experts in their fields. In exchange, the president of ARB participated in the German Library Congress in 1978. Unfortunately, due to limited financial resources, the number of such invitations that library associations can afford to extend will remain small in the absence of government subsidies for such purposes.

In Germany, the Bibliothekarische Auslandsstelle (BA) handles invitations to librarians from other countries. The BA is an institution belonging to the Deutsche Bibliothekskonferenz, an umbrella organization of the German supraregional library associations mentioned earlier.



In both Germany and Brazil, government programs have been established to integrate special libraries on the national level into supraregional information systems. In the Federal Republic of Germany this is being implemented through the Deutsche Forschungsgemeinschaft (DFG). Within a plan to establish centers of specialized literature, the DFG has asked special libraries of supraregional importance to collect relevant scientific materials from abroad for purposes of future research. These collections include, for instance, criminology, nuclear energy law, and regional geology. In addition, the DFG has requested participating libraries to work toward improving accessibility to the literature in their respective subject areas through modern information means.

The German federal government also involved special libraries in a program

for the promotion of information and documentation, the so-called I and D program. In each of the planned systems for subject information there should operate in the future both a central subject-oriented library and a subject-oriented information center. The latter should be responsible for information on literature; the former for the supply of literature. In this way, the government has given new definition to the role of special libraries as subject-oriented libraries within a national information network. The plan also called for direct cooperation among special libraries beyond national borders by including single systems for subject information into subject-oriented information databanks which are compatible with those of other countries. Of course, direct cooperation between libraries has been practiced before in cases where there has been actual need; however this plan tried to broaden the scope of resource sharing, nationally and internationally.

Similar steps are also underway in Brazil where special libraries have been included in supraregional plans for development. The Brasilian Institute for Information, Science and Technology (IBICT), a member of the National Council for the Development of Science and Technology, is responsible for:

- lending support to the integrated development of information and documentation in the country and for the standardization of documentation in order to obtain a perfect compatibility with similar systems elsewhere;
- bibliographic control of the national collections in science and technology in order to make them accessible to the searcher and user;
- cooperating with other international systems and integrating Brazil into UNISIST.

Within this scheme, IBICT offers the following services:

- information retrieval from the Brazilian specialized bibliographies;

- information retrieval from the collective catalog of periodicals;
- bibliographic research in information science;
- providing photocopies from Brazilian literature on request;
- providing foreign literature to experts within Brazil.

In this way, the IBICT functions as a central coordinating and nonsubject-oriented institution for the transfer of information among special libraries in Brazil as well as those in foreign countries.

At present, IBICT is engaged in a project to collect information on stocks of periodicals in the supraregional area. In 1955, a commission for the national union catalog was established to coordinate the compilation of entries from regional union catalogs. These catalogs primarily contain regional union lists of periodicals such as the union list of periodicals from the Brazilian state Rio Grande do Sul, edited by the Biblioteca Centrale da Universidade Federal do Rio Grande do Sul in Porto Alegre and published in 1961. Since 1968, IBICT has been involved in a project to compile a supraregional union list of periodicals by means of datamation. Characteristic of the tendency toward decentralization, this union list is being arranged according to the major disciplines. For example, a union list of natural sciences and agriculture already appeared in 1975. IBICT also promotes continuing education in librarianship and plays a role in furthering the use of

computer systems for information delivery.

Among the subject-oriented institutions involved in this effort to improve cooperation at the regional and supraregional level and to expand international contacts in the area of information delivery and interlibrary loan are:

- Biblioteca Regional de Medicina (BIREME) in São Paulo;
- Serviço de Documentação e Informação Educacional in Brasília;
- Empresa Brasileira de Pesquisa em Agricultura (EMBRAPA) in Brasília;
- Processamento de Dados de Senado (PRODASEN) in Brasília;

Another project of the National Council for the Development of Science and Technology is the National System for Scientific and Technological Development. Its aim is the improvement of searches and information retrieval in science and technology.

## Networking

If one compares the efforts by the government sectors in Germany and Brazil to promote information delivery and documentation, common aims can be seen despite many distinctions regarding the scope and effect of the arrangements introduced. Both countries share the conviction that, in the long run, only supraregional information systems will prove to be economically feasible and cost-effective. Special libraries and other institutions within like disciplines are to be integrated into an information network as central focal points and as points which can also be addressed in the periphery. In every information network there must be a well-balanced relationship between central and peripheral components to ensure that information needed at the periphery can be requested there without burdening the center unduely.

At this level of organization, special libraries within federally directed or supported information systems can easily engage in international cooperation via direct contacts between the respective national centers. This is especially important in light of the strong international attention Unesco and IFLA have focused on the program of Universal Availability of Publications.

Until recently, cooperation in this area was largely limited to efforts by individual libraries to access special literature requested by their users or, more systematically, to acquire literature within a specific subject area. The Ibero-Amerikanisches Institut Preussischer Kulturbesitz in Berlin, for example, regularly carries out acquisitions journeys throughout Latin America and maintains direct contacts with libraries and other information suppliers in these countries in order to obtain literature that is not easily obtainable.

## Standardization

One example of bilateral cooperation at the governmental level is the agreement between the Brazilian and German governments to improve standardization. This agreement should extend to standardization in librarianship and documentation, too.

On the German side, the Deutsches Institut für Normung (DIN) is participating in the preparation of educational materials to be used in seminars in Brazil for teaching methods of standardization. The Normenausschuss Bibliotheks-und Dokumentationswesen (NABD) is responsible for librarianship and documentation within the DIN and maintains close contacts with Technical Committee 46 of the International Standard Organization, its committee responsible for documentation.

In Brazil the Associação Brasileira de Normas Técnicas has several standardization committees with study commissions responsible for the preparation of specific standards. The Instituto Nacional de Metrologia, Normalização e Qualidade Industrial has the task of directing the implementation of Brazilian standards, promoting their use, and carrying through the decrees of the Conselho Nacional de Metrologia,

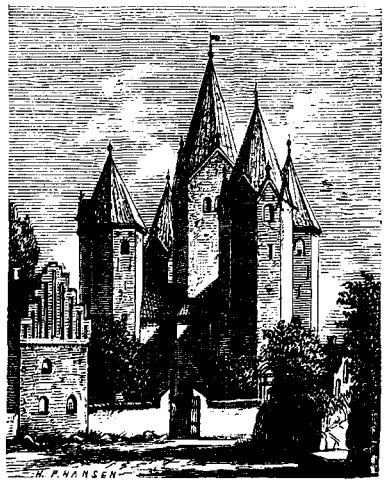
Normalização e Qualidade Industrial (CONMETRO), which is organized as an intergovernmental body.

CONMETRO is responsible for political decisions within the Brazilian system of metrology, standardization, and industrial quality. However, from the point of view of library politics, its structure has a serious weakness: its 22-member decision-making body, representing the Brazilian Ministries, fails to include the Ministerio da Educação e Cultura (MEC), which is responsible for general questions of documentation and librarianship. Owing to this situation, the importance of standardization in librarianship and documentation is presently not receiving sufficient recognition. This circumstance is difficult to understand, since the Coordenação do Aperfeiçoamento de Pessoal de Nível Superior at the MEC, with its Serviço de Documentação e Informação Educacional, has the special task of promoting continuing education for librarians.

The bilateral agreement between Germany and Brazil is meant to ensure that the benefits of NABD's international contacts can be transferred to the Brazilian partner, and that the gains made on that level can be used to benefit Brazilian as well as German information centers.

## Biomedicine

In the field of biomedicine in Brazil, the Biblioteca Regional de Medicina (BIREME) in São Paulo functions as a center for literature information and supply. BIREME was established by agreement between the Panamerican Organization for Health and the Brazilian government through its respective ministries, the MEC and the Ministry of Health. It is organizationally linked to the Escola Paulista de Medicina of the University of São Paulo. BIREME has access to MEDLINE and, therefore, can mediate Brazil's biomedical information needs. It also handles requests from experts for copies of single articles available through MEDLINE by sending photocopies through national and international interlibrary loan systems. On the basis of agreements between BIREME and individual university libraries, regional subject information systems have also been established.



A similar situation exists in the Federal Republic of Germany. Here the Deutsches Institut für Medizinische Dokumentation und Information in Cologne has access to the MEDLINE databank. Terminals have been set up in German university libraries, as well. However, access to literature is arranged differently than in Brazil. According to the aforementioned organizational structure of the German subject information systems, the Zentralbibliothek der Medizin (Central Library of Medicine) is responsible for furnishing biomedical literature requests through national and international interlibrary loan.

The safeguards that need to be considered at the national level to ensure the supply of information and literature are also valid at the international level, yet to a much higher degree. For this reason, the DFG in Germany attempts to access materials at the local and regional levels before requesting them through supraregional interlibrary loan systems. As a general principle, the time and money involved in international interlibrary loan re-

quires that national information resources must first be tapped and fully exhausted. Otherwise, there is a risk that the national centers may become too burdened by the demands of international loan to fulfill their functions.

Interlibrary loan on the international level requires that lists of holdings must be as complete as possible through union catalogs or at least through union lists of periodicals. In addition, it is important to ensure that titles that are in heavy demand, especially foreign titles, remain available to domestic users. International interlibrary loan should be limited to those materials which are used more seldom or which are not available for acquisition by the requesting library.

## Agriculture

In Brazil, information gathering in the field of agriculture is directed by the documentation and information system of the Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA) which is subordinated to the Ministry of Agriculture. This system is composed of: one center responsible for coordination, the Documentation and Information Department (DID); 3 regional and 22 product-oriented institutions which are attached to agencies of the federal government of Brazil; 24 institutions at the state level; and 40 independent centers. DID is responsible for the following activities:

- coordinating the supply of subject-oriented literature;
- registering ongoing research projects in agriculture;
- publishing scientific monographs and pamphlets;
- managing union catalogs of scientific periodicals and books;
- preparing specific bibliographies;
- supplying photocopies of single articles on request to users at the national and international level;
- managing a data bank;
- SDI services for specific user profiles.

The databank is connected with the information system AGRIS managed by FAO. University libraries and special libraries can access information through EMBRAPA. In this way, the agricultural information system is comparable to the biomedical system in its organizational structure. This is also true of the situation in Germany. The chief difference there is that documentation in agriculture is not yet as well-organized as in Brazil. While there are many well-equipped institutions working in specific areas of agricultural information and documentation, they belong to different governmental administrations at the federal or state level or to independent institutions. This situation makes it difficult to coordinate activities within a national framework. Only the supply of literature is administered centrally by the Zentralbibliothek der Landbauwissenschaft in Bonn.

## Law

An information network in the field of law, the Processamento de Dados do Senado (PRODASEN), has been established in Brazil. Its bibliographic file, the Sistema de Informação Juridica (SIJUR), was developed in 1971 by contract with a firm in the computer industry. It has a data bank containing information on legislation, jurisdiction, and theoretical foundations of law. This information system serves users ranging from the Senate in Brasilía to university libraries that need access to juridical information. These libraries can conduct searches through computer terminals when needed. In 1974, the Ministry of Finance joined PRODASEN in order to use SIJUR for tax legislation. The system, however, is only capable of delivering information; it is not used for providing literature.

Compared with developments in Brazil, the juridical information system in Germany is not as far developed. Preparatory work has been underway since the early seventies on an information system, JURIS, which is intended to

combine literature documentation and data documentation. The attempt to combine these two different levels of documentation may be the reason why development has been slow. Regarding provision of literature, the Staatsbibliothek Preussischer Kulturbesitz in West Berlin is the central depository for juridical collections. It contains a comprehensive collection of foreign juridical literature which is supported financially by the DFG. In addition, the Staatsbibliothek acquires official publications on legal matters from other countries. These publications are supplied, in substantial number, through bilateral exchange contracts. These materials are excellent sources for studies in comparative law. The Bibliothek des Iberoamerikanischen Instituts is housed in the same building as the Staatsbibliothek, affording close coordination of South American acquisitions between the two libraries.

## Sports

Some time ago, the Federal Republic of Germany and Brazil had concluded a mutual agreement to promote sports. This agreement included not only the development of sports facilities and arenas but also information and documentation in this field. The central agencies for these endeavors are the Bundesinstitut für Sportwissenschaft in Cologne and the Departamento do Educação Física e Desportos de Ministerio da Educação e Cultura (DED/MEC) in Brazil. Plans called for the joint development of base-lines to establish a centralized sports information network in Brazil. The practical experiences of the Bundesinstitut für Sportwissenschaft, the central German institution for sports documentation and information, together with those of library institutions at the national and international level was looked at as a valuable asset in this work. The DED/MEC had established an advisory panel consisting of one representative each from the DED/MEC, the sports sciences, the library profession, the field of documentation, and a sports documentation institution. An analysis of the state of the art of sports libraries and documentation institutions was a primary requisite for establishing a framework for Brazilian sports documentation.

Steps had been taken in this direction. In 1974, during a meeting of the scientific department of the Brazilian Association for Sports Medicine, the Center for Documentation and Information in Sports Medicine was established in Porto Alegre. Later renamed the Center for Documentation and Information in Sports Science, its activities had been directed from the beginning toward the supraregional level. The Center published a journal, *Medicina do Esporte*, which regularly carried bibliographic listings of sports-related literature.

Although the work being done in Porto Alegre to improve documentation in sports is impressive, a survey made in 1976/1977 concluded that most special libraries within Brazil's 80 sports academies contain fewer than 2,500 volumes. Little has been done, in terms of documentation, to make the literature more widely accessible. Hopefully, this situation will improve through cooperative efforts on the national as well as the international level. One such effort was the translation into Portuguese of the German-language thesaurus of sports science, sponsored by the International Association for Sports Information.

While advances were being made in sports literature documentation, data documentation lagged behind. The organizational separation between these two areas of documentation was partly responsible for this development. For while literature documentation in sports science is the province of the MEC, data documentation is, by law, under the aegis of the National Sports Council in Rio de Janeiro. This structural bifurcation has also tended to restrict cooperative efforts among libraries to emphasis on literature documentation.

## Conclusion

This brief overview of some of the areas in which direct or indirect cooperation on the international level is possible among special libraries does not pretend to cover all conceivable aspects. The authors have been selective owing to space limitations, as well as to the objective differences that qualify comparison of librarianship and documentation within certain disciplines in Germany and Brazil. However, it is hoped that this paper will stimulate thinking about how equivalent solutions can be found in similar cases. In this sense, it may serve as a contribution to greater international library cooperation.

## Acronyms and Abbreviations Used

ARB—Associação Riograndense de Bibliotecários
ASpB—Arbeitsgemeinschaft der Spezialbibliotheken
BA—Bibliothekarische Auslandsstelle
BIREME—Biblioteca Regional de Medicina
CONMETRO—Conselho Nacional de Metrologia, Normalizaçao e Qualidade Industrial
DED/MEC—Departamento do Educação Física e Desportos de Ministerio da Educação e Cultura
DFG—Deutsche Forschungsgemeinschaft
DID—Documentation and Information Department
DIN—Deutsches Institut für Normung
EMBRAPA—Empresa Brasileira de Pesquisa Agropecuária
IBICT—Brasilian Institute for Information, Science and Technology
MEC—Ministerio da Educação e Cultura
NABD—Normenausschuss Bibliotheks-und Dokumentationswesen
PRODASEN—Processamento de Dados do Senado
SIJUR—Sistema de Informação Juridica

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# SLA 1981 SALARY SURVEY UPDATE

In an effort to assist special librarians in salary negotiations, Special Libraries Association conducts an in-depth salary survey every three years. In the intervening years the Association, using a sampling technique, polls 25% of the membership in an effort to provide current salary information. The results provide an overview of the salaries of special librarians and a measure of annual salary increases since the last survey.

The 1981 data updates the overall national and regional salary data reported in the 1979 in-depth triennial salary survey report and the 1980 salary survey update [see *Special Libraries* 70 (no. 12):559–589 (Dec 1979) and *Special Libraries* 71 (no. 12):541–542 (Dec 1980)]. While not as comprehensive as the 1979 survey report, the 1981 report indicates general national salary trends, and in conjunction with the 1979 report and the 1980 update, provides special librarians with guidelines for salary discussions.

During May 1981, a 25% sample of Members and Associate Members received the survey questionnaire.

| | |
|---|---|
| Questionnaires Mailed | 2,248 |
| Questionnaires Returned | 1,507 (67%) |
| Invalid for Computation | 109 |
| Useable Responses | 1,398 (62.2%) |

The usable responses show an increase of 0.2% from the 1980 update survey.

Table 1 reports the changes in mean and median salaries from Apr 1, 1980, to Apr 1, 1981, within each U.S. census

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Table 1. 1981 Mean and Median Salaries by Census Region in Rank Order of Percentage Change in Median from 1980 to 1981.

| Census Region | Median 1980 | Median % of Increase (or Decrease) | Median 1981 | Means 1980 | Means % | Means 1981 |
|---|---|---|---|---|---|---|
| East North Central | 18,700 | 12.8 | 21,000 | 20,700 | 11.1 | 23,000 |
| Canada* | 21,000 | 11.9 | 23,500 | 22,500 | 11.1 | 25,000 |
| West South Central | 17,600 | 10.8 | 19,500 | 19,500 | 4.1 | 20,300 |
| South Atlantic | 20,600 | 9.2 | 22,500 | 23,400 | 4.7 | 24,500 |
| Mountain | 18,500 | 8.1 | 20,000 | 19,600 | 9.7 | 21,500 |
| Middle Atlantic | 19,500 | 7.7 | 21,000 | 21,000 | 7.6 | 22,600 |
| West North Central | 18,800 | 7.4 | 20,200 | 20,200 | 7.4 | 21,700 |
| Pacific | 20,500 | 7.3 | 22,000 | 21,700 | 5.5 | 22,900 |
| New England | 18,000 | 6.7 | 19,200 | 19,800 | 8.1 | 21,400 |
| East South Central | 17,000 | 1.8 | 17,300 | 17,300 | 7.5 | 18,600 |
| Overall | 19,700 | 7.1 | 21,100 | 21,200 | 7.5 | 22,800 |

*Salaries in 1981 reported in Canadian dollars. The exchange rate on Apr 9, 1981, was approximately Canadian $1.00 = United States $0.84.

region and Canada. The figures present changes in dollar amounts and in percentages.

The survey indicates an overall median salary increase of $1,400 from $19,700 in 1980 to $21,100 in 1981. This represents a 7.1% increase since last year. The overall mean salary reflects a $1,600 increase from $21,200 in 1980 to $22,800 in 1981, a 7.5% increase.

A comparision with past surveys indicates an increase of 17.2% in median salaries over the last two years from $18,000 in 1979 to $21,100 in 1981. The 1981 figures also reflect an 18.1% increase in mean salaries from $19,300 in 1979 to $22,800 in 1981.

All ten regions indicate median salary increases ranging from 12.8% to 1.8% above the 1980 figures.

Table 2 lists the salary distribution in rank order of 1981 median salaries for Canada and the nine U.S. census regions. In comparing the rankings with the 1980 update, the East North Central region moves up from sixth to fourth in the rankings. This shift displaced the Middle Atlantic region to fifth and the West North Central region to sixth in the rankings. The top three regions and the last remain in the same order as the 1980 update. West South Central advances from ninth to eighth while New England drops from eighth to ninth in the rankings.

The salary survey instrument, like the data it requests, needs constant updating. In 1982 the Association plans to conduct its next triennial survey. We expect that the 1982 survey will request information in several areas not covered in previous triennial surveys. One of the more important additions in the 1982 survey will be questions designed to obtain salary data by industry.

After reading this 1981 update, let us know how you use the information and how we might better serve your needs by expanding the SLA salary survey.

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Table 2. Salary Distribution by Census Region in Rank Order of 1981 Median.

| Census Region | Average Lowest 10% | 25th Percentile | Median | 75th Percentile | Average Highest 10% | Mean | No. Respondents |
|---|---|---|---|---|---|---|---|
| Canada* | 15,600 | 18,900 | 23,500 | 29,000 | 40,900 | 25,000 | 88 |
| South Atlantic | 13,400 | 18,000 | 22,500 | 29,300 | 42,200 | 24,500 | 185 |
| Pacific | 13,400 | 18,000 | 22,000 | 26,400 | 37,000 | 22,900 | 235 |
| East North Central | 13,800 | 17,700 | 21,100 | 26,400 | 40,400 | 23,000 | 242 |
| Middle Atlantic | 13,300 | 17,100 | 21,000 | 26,300 | 38,200 | 22,600 | 327 |
| West North Central | 13,600 | 16,800 | 20,200 | 25,000 | 35,600 | 21,700 | 62 |
| Mountain | 12,400 | 17,900 | 20,000 | 24,700 | 33,400 | 21,500 | 59 |
| West South Central | 11,600 | 15,700 | 19,500 | 22,500 | 33,900 | 20,300 | 71 |
| New England | 11,600 | 16,100 | 19,200 | 24,700 | 39,800 | 21,400 | 102 |
| East South Central | 10,800 | 14,200 | 17,300 | 21,300 | 31,300 | 18,600 | 27 |
| Overall | 13,100 | 17,400 | 21,100 | 26,500 | 39,000 | 22,800 | 1,398 |

*See footnote to Table 1.

# Actions of the Board of Directors Chapter, Division, and Joint Cabinets Annual Business Meeting June 12, 13, 16, 17, 19, 1980

**The following is a summary of actions taken by the Board of Directors and the Chapter and Division Cabinets during SLA business meetings at the 72nd Annual Conference in Atlanta.**

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**Financial Reports**—FY 1980 was financially successful for the Association. The Association staff projects that the budget will be met for FY81, with a modest excess of income over expenses. The Finance Committee will recommend priorities for the allocation of any excess income at the Fall Meeting of the Board.

Although the final verdict is not yet in on how the dues increase affected membership, the latest figures indicate that the total is over the numbers projected in the FY81 Budget. The Board approved a membership projection of 11,500 for FY82.

Based on the recommendation of the Association's auditors, interest earned on time deposit accounts will henceforth be reinvested in money market funds. The Board also approved the establishment of a Merrill Lynch Ready Asset Trust Account for the Computer Fund.

**New Director Appointed**—Ruth S. Smith was named to fill the vacancy left by the resignation of Robert Krupp on the Board of Directors. Krupp was originally appointed to replace Sandra Hall after she resigned as Director; however, a tragic accident forced him to resign from office. The Board expressed its confidence that Bob Krupp will soon be able to resume his active participation in Association affairs.

**Hike in Registration Fees**—Since the cost differential between advance and on-site registration at Annual Conferences is merely $15, many registrants choose to wait until the last minute to register on-site. This situation has caused numerous hardships for the Conference Coordinator and others involved in advance scheduling of meeting rooms, food functions, and field trips. In order to have a more realistic assessment of conference registration numbers prior to the Annual Conference, the on-site member registration fee was increased by $15 to $105, and the nonmember fee was increased by $20 to $125, effective for the 1982 Conference. The preregistration fees for members and nonmembers will remain at $75 and $90, respectively. It is hoped that this increase in the on-site fees will encourage more preregistration for future conferences.

**Professional Development**—A proposal was presented by the Education Committee to establish a "Middle Management Certificate Program" which would provide a course of study for librarians who are middle managers. The program would be analogous to an organization's management training program, focusing on developing skills, decision-making aptitudes, and practical training experience. Participants who complete the 75-hour program during an 18-month period would earn an SLA Management Certificate and 7.5 CE units. The Board approved, in principle, the development of such a program.

**Campaign Statements Nixed**—At its meeting in Portland, the Board referred to the Nominating Committee a proposal to require candidates for SLA office to provide

prepared statements outlining campaign promises and to include these statements in the mail ballot sent to the membership. The Nominating Committee returned to the Board its recommendation that such statements should not be required as part of the election process.

While the Board agreed with the Committee's assessment that a critical review of past performance is of greater value than campaign promises, it expressed the need for more information than is normally included in the candidates' vitae. The Association Office was instructed to disseminate such information to Chapters and Divisions through press releases and/or by publishing interviews with the candidates in the *Specialist*.

**Bylaws Changes**—In 1978, several recommended changes in the Bylaws failed to pass because fewer than 40% of the membership voted, as required by the current Bylaws. The recommendations concerned the election procedure for Honorary Members, alternates representing officers at Chapter and Division Cabinet meetings, annual reporting dates for Chapters and Divisions, affiliation with other organizations, and the percentage of mail ballots that must be returned by the membership for the vote to be valid. Another attempt is now being made to enact these and additional amendments concerning the approval of dues and fees increases.

Fourteen Bylaws changes were approved by the Board and by the majority of the members present and voting at the 1981 Annual Board Meeting. As required by the current Bylaws, the proposed amendments have been submitted to the voting membership at large via mail ballot. The votes will be counted in October 1981.

**Contributed Papers**—As requested by the President, The Special Committee on Contributed Papers Procedures reported to the Board on some of the recurring problems associated with contributed papers sessions at Annual Conferences. These problems include 1) scheduling conflicts, 2) competition with Division programs for an audience, and 3) difficulty in locating quality offerings. Following the Committee's recommendation, the Board voted to eliminate conference-wide contributed paper sessions and to invite Divisions to include contributed paper and poster sessions as part of their programs at future conferences.

**Electronic Mail Project**—The Executive Director reported that the system has been found to be an efficient and cost-effective means for communications among Board members and operations staff. The monthly costs have been minimal, and only a small percentage of the project's budgeted allotment has been spent; although the project is due to expire in December, there is enough money to continue it for 20 more months. The Board discussed the costs involved in adding additional Board members to the system and unanimously agreed to expand the experiment to include all Board members who have compatible terminals for the purpose of conducting Association business.

**Membership Benefits**—With an eye toward recruiting more Sustaining Members, Patrons, and Sponsors, the Board voted to approve new services for these membership classes.

In addition to the benefits they already enjoy, Sustaining Members will now receive continuing education (CE) course registration for one staff member at the SLA member rate, and new NSP's at a 50% discount for the first copy ordered.

Patrons and Sponsors formerly received no benefits, which perhaps explains why the Association had only four contributors in these categories. These membership classes will now receive all the benefits accorded to Sustaining Members, with the exception of Chapter and Division affiliation and attendance privileges at Chapter meetings and at Division programs during SLA Annual Conferences.

In addition, Patrons and Sponsors will be offered CE course registration for two staff members at the SLA member rate. Sponsors will also have the option of registering two staff members at Annual Conferences at the SLA member rate. Patrons will have the privilege of designating one staff member for complimentary personal membership. They will also receive preferred conference exhibit booth selection and one complimentary conference registration.

**Long Range Planning**—The Special Committee on Long Range Planning reported on its plans to survey planning methods currently employed by the Association. The Committee is engaged, also, in the selection of a planning model. A by-product of the selection process will be a bibliography on planning that can be made available to the Board of Directors, Chap-

ters, Divisions, and Association Committees. The Special Committee expects to make its final selection of a planning model in March 1982 and its final report and recommendations to the Board in June 1982.

**CE Courses**—Since many registrants report that they cannot justify to their organizations the extra expense of remaining at Annual Conferences to participate in field trips and tours, the Board agreed to a proposal for scheduling additional continuing education courses on Thursday during the week of the 73rd Annual Conference (Jun 5-10, Detroit).

**Office Space**—The Executive Director reported on the need to locate new office space for the Association Headquarters since the current facilities can no longer accommodate the growth in staff and program areas. Two alternatives were considered: to locate space for rent and to locate space for purchase. Opting for the second alternative, the Board authorized the Executive Director to investigate the purchase of property in the New York City area.

**Public Relations**—The President has appointed a Public Relations Task Force, chaired by Ellen Steininger, to assist the Association's office staff in promoting public relations activities.

**1990 Conference Site**—Cleveland, Ohio was approved as the site for the 1990 Annual Conference.

**Conference Chairmen Chosen**—Didi Pancake was appointed Program Committee Chairman for the 1983 Annual Conference in New Orleans. "Removing Information Barriers" will be the Conference theme.

Fred Roper was approved as Chairman, 1984 Conference Program Committee.

**Conflict of Interest**—The H. W. Wilson Company Award Committee reported that Committee members who are also candidates for the award will resign from the Committee if they feel that their presence might create a conflict of interest in the selection of a winner.

**Inter-Association Relations**—The Executive Director was instructed to investigate the advantages to SLA of membership in the American Federation of Information Processing Societies (AFIPS) and to report his findings to the Board at its Fall Meeting.

A request for establishment of cross-representation with the Association for Population/Family Planning Libraries and Information Centers International (APLIC) was referred to the Social Science Division for consideration.

SLA's role on the American National Standards Committee Z39 was discussed, particularly its continued participation in Committee activities. The consensus was that the Association's input in Z39 is crucial, and, therefore, justifies the rather steep affiliation fee, which has recently been raised from $500 to $2,500.

The Board rescinded its previous authorization to reestablish SLA's representation on the Board of Documentation Abstracts, Inc. This action was taken as a result of the difficulties the SLA Representative to DAI experienced in gaining DAI's recognition and being seated on the DAI Board.

**Chapter Guidelines**—The Chapter Cabinet's request for approval, in principle, of the revision of guidelines for the formation of Chapters and Provisional Chapters was granted.

**SLA Division Structure**—In view of the work and time involved in conference planning, projects, and publishing, as well as the financial inequalities among Divisions, the Special Committee on Division Structure submitted a proposal for the establishment of a cooperative union or council(s) of Divisions to pool resources. The Committee also proposed that the professional needs of specialized interest groups be directed to the Division Cabinet Chairman to arrange for support.

As instructed by the Board, the Division Cabinet discussed these recommendations but did not take action. Many Division chairmen felt that, since they had not had time to study the proposal on Division structure nor to discuss it with their constituents, a decision would be premature. The Division Cabinet, therefore, deferred further discussion on the matter until the 1982 Winter meeting.

**Interest Groups**—At the Board's 1981 Winter Meeting, the Women's Caucus of the Social Science Group, New York Chapter, presented a proposal for the creation of autonomous "Interest Groups" with national (sic) membership budgeting and decision-making representation to advocate Association-wide concerns. This proposal was referred to the Special Committee on SLA Division Structure for study and appraisal.

Reporting back to the Board in June, the Committee recommended that, rather than form a new entity within the Association,

the Women's Caucus should establish a Committee which would be eligible for Chapter support, Association funding, and an appointed Board Proctor. Having heard the Committee's report, the Board voted to affirm its position not to form units other than those presently authorized in the Bylaws.

**Job Descriptions**—The Board adopted revised job descriptions for the Executive Director and the Assistant Executive Director; approved a new job description for the position, Clerk/Typist; and upgraded the position of Computer Operator to Supervisor, Data Processing Department.

**Disability Insurance**—The Board approved the offering of term life, hospitalization income, and excess major medical group insurance plans to the membership and authorized the Association staff to select an appropriate plan and an insurance broker. The Board also approved a TIAA plan for employee group total disability insurance. It considered, but did not take action, on a proposal for an Association-wide liability insurance policy.

**Sexual Harassment Policy**—A draft statement delineating the Association's policy on sexual harassment at the workplace was approved for inclusion in the SLA Employee Manual. The statement is based on the "EEOC Final Guidelines on Sexual Harassment in the Workplace" published in the *Federal Register*, Sep 23, 1980.

**NSP Royalties**—The reporting date for the Publications Committee's study of royalties was extended until the 1981 Fall Board Meeting. The present policy for awarding 40% royalties on certain non-serial publication will continue until that time.

**1982/83 Scholarship and Stipends**—At the joint recommendation of the Scholarship and Positive Action Program Committees, the Board approved the awarding of up to two $5,000 scholarships and up to three $2,000 minority stipends for the 1982/83 academic year.

**Robert's Rules**—The Board discussed a problem that has been in evidence at Division and Cabinet meetings—a poor knowledge of parliamentary procedure. It was felt that workshops on leadership are needed. As a first step, the Board recommended that the basic rules of parliamentary procedure should be published in the 1982 Conference Program.

## Errata

The following correction should be noted for Patricia Cupoli's article, "Reference Tools for Data Processing, Office Automation, and Data Communications: An Introductory Guide," which appeared in the July issue of *SL*. *The Million Dollar Directory*, listed on p. 242 in the Appendix to the article, is published by Dun & Bradstreet and not by Standard & Poor's Corporation.

Our apologies are due to Dorothy Kasman, whose name was omitted from the list of SLA officers which appeared in the July issue of *SL* [72 (no. 3): 301]. Kasman will continue to serve as Treasurer during 1981/82.

# Management Education For Librarians

McGill University's Graduate School of Library Science celebrated its 50th anniversary on Apr 24, 1981, with a symposium on "Management Education for Librarians." Seventy-five people, many of them graduates of the School, were greeted by Vivian S. Sessions, chairman of the Graduate School, as they gathered for coffee, croissants, and general conversation. Principal David L. Johnston opened the symposium, welcoming participants and recalling the early days of the School.

"Management Education for Librarians" was addressed in two parts. In the morning, a panel moderated by Elmer Smith, director, Canadian Institute for Scientific and Technical Information, discussed "Why Management Education—Identifying the Issues."

Margot McBurney, chief librarian, Queen's University, Kingston, Ontario, discussed personnel management and its importance in times of shrinking economic resources and expanding use of technology. She stressed the need for good performance evaluation, fair salary administration, effective training, and motivation to meet high standards. She also emphasized the need for management training to prepare librarians for management responsibilities.

Agatha Bystram, director, Library Services, Department of Fisheries and Environment, discussed financial management and the importance of knowing how to make the best use of fiscal resources. Besides outlining various budget techniques, she explained the "why" and "how" of zero base budgeting, the system she considers to be the most objective and valid. She stressed the importance of knowing how to develop a financial package and to discuss it in management's own language. Library education, she feels, should develop this capability in students.

The third speaker in the morning was Noel Ryan, chief librarian, Public Library System, Mississauga, Ontario, who discussed managerial skills. Dealing with people, according to Ryan, is the most important aspect of management. He believes graduates should be able to advance rapidly to managerial positions. Though managerial skills are developed in practice on the job, basic techniques can be taught. The key for librarians is to think of themselves as managers and for students to prepare themselves to be managers.

The afternoon session, moderated by Dr. Paul E. Filion, director of libraries, Concordia University, Montreal, discussed management education programs. Dr. Robert Hayes, dean, Graduate School of Library and Information Science, UCLA, described the program at his school and the various ways in which students can be trained in management. He believes that libraries are essentially well-managed, though often librarians have to learn their skills through experience. He favors admission requirements which include courses in statistics and computer programming, since these offer students powerful management tools as a basis for further learning. He discussed the possibilities of MLS/MBA programs, as well as courses tailored to the special needs of librarians.

The day's last speaker, Dr. Robert Cooper, associate dean and director, MBA Program, Faculty of Management, McGill University, discussed basic management skills: decision-making, planning, communicating, and problem-solving. He favors learning through hands-on experience and advocates using the case method, projects, and skill development techniques to give students short cuts to becoming managers. He strongly urges librarians to take MBA courses and management seminars.

Each of the speakers elicited excellent questions and comments from the symposium participants. In spite of a marvellous lunch at the Faculty Club, no one felt like sleeping through the sessions, and it was generally agreed that the 50th anniversary symposium had been an interesting and stimulating event.

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**Graduate School of**
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# STAFF DEVELOPMENT

**Arnold, John D.** / The Why, When and How of Changing Organizational Structures. *Management Review* 70(no. 3):17–20 (Mar 1981).

New executives frequently decide to reorganize before considering the full implications of reorganization. Sometimes such a step is taken to buy time for the new executive. When pressed for results, he/she can argue that people are still getting adjusted to the new structure. No reorganization should be undertaken until the following three steps have been taken: development of a clear mission and objectives statement with the help of subordinates; assessment of strengths and weaknesses of each key player; and solicitation of criteria for realignment from people in the organization. In order to develop the criteria, two questions should be asked: what *is* happening that *shouldn't* be happening? and what *isn't* happening that *should* be happening? The importance of getting the best person for each key position is stressed. The purpose is not to "play musical chairs" or accommodate people but to contribute to the achievement of primary objectives. The executive should, however, be aware of the impact certain changes might have on those whose positions are changed or not changed and even on outsiders who do not understand the changes.

**Baird, Lloyd** / Managing Dissatisfaction. *Personnel* 58(no. 3): 12–21 (May/Jun 1981).

Dissatisfied employees may endure their situation for a limited time, but they eventually do something to get what they want. There are four general categories of options: they may increase their work effort; sabotage the work effort; depart from the organization; or sink into apathy, i.e. do the minimum amount of work to maintain the position. The challenge to management is to get dissatisfied workers to increase their work effort. Whether they do or not depends on a combination of three factors: their level of performance, the nature of the organization's reward system, and other available work options. Possible outcomes of various combinations of these factors are described. Since many of the outcomes are negative, it is important to deal with the problems. Several suggestions for managing dissatisfaction are presented, e.g., reward good performance, develop responsive management support systems, and don't rely on the attitude survey.

**Beer, Michael** / Performance Appraisal: Dilemmas and Possibilities. *Organizational Dynamics* 9(no. 3):24–36 (Winter 1981).

There are many difficulties experienced by managers and employees in performance appraisal, but the greatest conflict is between individual and organizational goals or objectives. The individual wants to confirm a positive self-image and obtain certain rewards, such as promotion or pay, while the organization wants individuals to be receptive to negative information about themselves in order to improve their work. The author summarizes the underlying causes of problems and suggests ways of dealing with the main barrier to effective appraisals, such as avoidance by the supervisor and defensiveness on the part of the employee. One suggestion is to separate the evaluation and counseling aspects of the performance appraisal interview. If this is not possible, a mixed-model interview, which is described in detail, can be used to attain the same purposes.

**McCaffrey, William T.** / Career Growth Versus Upward Mobility. *Personnel Administrator* 26(no. 5):81–87 (May 1981).

At a time when there is no longer unlimited advancement in return for performance, companies must find a way to reverse the disappointment and stagnation of many plateaued employees and middle managers. One way is by lateral transfer, i.e., moving from one job to another within the same organization, at the same hierarchical level. This allows for greater flexibility and can create a climate conducive to innovation. It is important that managers support the lateral move process and that all employees understand that there is nothing negative about a career plateau. Examples of how the lateral move process works are given.

**McCarley, Dina** / About Position Descriptions. *Management* 2(no. 2):12–14 (Spring 1981).

A position description (PD) in the federal government is used primarily for classification purposes but can also help determine qualification requirements in recruiting, placement and promotion; detect duplication of work; inform applicants about prospective responsibilities; determine standards of performance; and other useful purposes. Sometimes they are based on the personality of the person in the position rather than the needs of that position. More recently, the Factor Evaluation System (FES) has been introduced in the government. This system, a method of assigning grades based on nine evaluation factors, consists of a brief listing of the major duties of the position, followed by a description of those duties in terms of the nine evaluation factors. Some suggestions for writing a good PD are (1) be factual; (2) be objective; (3) be direct and specific (avoid "bureaucratese"); (4) refrain from characterizing tasks broadly as "difficult" or "complex"; and (5) be sure the PD is a true statement.

**Newell, Gale E.** / Organizing a Successful Management Needs Analysis. *Journal of Systems Management* 32(no. 6):30–33 (Jun 1981).

The author describes a method of implementing or revising an accounting information system. The objectives of the management needs analysis, essential to the successful implementation of any information system, are given, along with samples of both general and "hidden" questions which might be used to determine those needs. The necessity for acceptance of a new system by employees is stressed. A flow chart illustrates the tasks and organization required for an analysis of management information needs. The process allows the organization to look at the current needs of management, which may be quite different from the needs expressed when an earlier system was implemented.

**Petit, Thomas A. and Terry W. Mullins** / Decisions, Decisions: How to Make Good Ones on Employee Selection. *Personnel* 58(no. 2):71–77 (Mar/Apr 1981).

Using the example of a young man who impressed everyone by his intelligence, friendliness, and eagerness both during his interview and his training period but performed in a perfunctory manner on the job, the authors explain what went wrong in the selection process. Five important steps in the employee selection process are discussed: define expected performance; identify key factors necessary for effective job performance; generate candidates; collect key factor information about each; and evaluate each candidate in terms of the key factors. This process can be used for both rank-and-file jobs and executive positions. Adherence to this process should improve the overall quality of the organization's human resources.

**Scanlon, Burt K.** / Creating a Climate for Achievement. *Business Horizons* 24(no. 2):5–9 (Mar/Apr 1981).

Achievers have certain common characteristics: They set challenging but achievable goals for themselves if none are set for them; they develop specific actions and a timetable which help them reach goals; they need feedback; and they seek help and support from others to the extent that it is needed to accomplish their goals. Their motivation is a result of both genetics and specific forces operating in their immediate environment. Research has shown that people can be trained to achieve and to provide a nurturing environment for achievement although not all high achievers make good managers. Four elements necessary for creating a climate for achievement are presented and discussed. These are: the presence of explicit goals; a system of feedback and positive reinforcement; emphasis on individual responsibility; and rewards based on results.

**Smith, Don A.** / Is Your Salary Program on Target? *Management World* 10(no. 3):21–22 (Mar 1981).

One of the factors that is basic to job satisfaction is a sound compensation program that is perceived as equitable. Three important components of a sound program are: the underlying philosophy, a detailed job description, and an effective job evaluation procedure. A compensation philosophy should include such principles as the salary and benefits together comprise a total compensation package and comparable pay for comparable work. Job descriptions should include a concise understanding between the employee and the supervisor

on how the position contributes to the unit, describe interrelationships of the position with other positions, and provide a basis for the evaluation of the position. The evaluation is the determination of the values of jobs through a formal and systematic procedure. It is important that the job evaluation measure only the requirements of the job and not the person's skill, though this is certainly associated with accomplishment and effort.

**Thompson, John T.** / Helping Line Managers to Become Change Agents. *Training and Development Journal* 35(no. 4):52-56 (Apr 1981).

Sometimes organization development (OD) consultants, rather than helping managers to create and manage change, act as if they were the change agents. The OD consultant's role is to assist the client in developing data about the organization, in making free, informed choices about the data, and in becoming committed to certain actions. Some of the barriers to helping a manager are explored, and guidelines are suggested which should help both consultant and manager reach desired goals. The importance of having a personally integrated theory of how change takes place is stressed, while the idea that confrontation leads inevitably to conflict is refuted. Confronting the reality of a situation can release the energy that is frequently exhausted in building the negative fantasies of what might happen if one confronts an issue.

**Lucille Whalen**

# REVIEWS

**Book Theft and Library Security Systems, 1981-1982,** by Alice Harrison Bahr. White Plains, N.Y., Knowledge Industry Publications, Inc., 1981. 157 p. $24.50. LC 80-26643; ISBN 0-914236-71-7.

A famous author was once described as being like the Venus de Milo. What there was of him was excellent. The same, I think, is true of *Book Theft and Library Security Systems, 1981-1982.* The topics covered are well explained and generously illustrated. Although an update of a previous work, this revision is a superior effort in every regard from typesetting and content analysis to the selected bibliography.

This work provides the strategy for a sound approach to certain security problems in the library or bookstore setting. It offers professionals information in selecting devices to help prevent book loss and suggests means of making loss assessments. Numerous references are given for students or librarians who want to pursue the matter further.

The main focus is on electronic security systems. The guide is most useful in this area and includes a listing of libraries using such systems. Fortunately, the costs of these systems has remained about the same during the last six years, and the same vendors are still in business. Librarians who use A/V equipment will appreciate this last point. The detection equipment has been improved, and customers still have a choice between bypass and full-circulating systems. The book does not emphasize an important issue: all such systems enhance but do not replace other security measures. For example, someone must be situated near the system (presumably close to the exit) to respond to a ringing alarm.

Bahr describes a clear, step-by-step approach to several methods of measuring book loss and advises how the relative cost-benefit value of each procedure may be assessed. Census, inventory, and sample methods are outlined. In describing the sampling approach, the author incorrectly calls it random sampling. True random sampling probably is not feasible in a library setting, but the suggestions offered instead are adequate for the task. Also, the suggestion that beginning statistics students conduct the sampling of library books as a class project has little merit. The number of student hours required in such a project could hardly be worth the minimal learning derived from what is essentially a clerical task. Otherwise, the chapter describing the measurement of book loss provides much useful and well-presented information.

No attempt is made to cover security hardware which may be as vital to a library

security plan as book detection equipment. Experts forecast the market for security systems will triple by 1990, reaching $2.4 billion sales annually, with 11% of this market in retail sales. Libraries should benefit from advances made in intercom, smoke detector, CATV, wireless systems, and ultrasonic devices. Today libraries can employ sophisticated intrusion detection alarms which can be cost beneficial since burglar alarm ratings can affect insurance policies. This book is an excellent start but not a total review of a library security program.

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**An Introduction to Mini & Micro Computers** by Fabian Monds and Robert McLaughlin. Stevenage, U.K. and New York, Peter Peregrinus, Ltd., 1981. 133 p. (pbk). ISBN 0906048-48-6.

This volume is a lucidly written text designed for the advanced beginner/intermediate-level individual interested in mini and micro computers, including their internal logic and electronics. In nine chapters, the authors cover computer concepts such as binary numbers; instructions and data formats; three specific minicomputers and two microcomputers' instructions and architectures; electronic logic elements combined to implement real computer structures; peripheral equipment; FORTRAN, COBOL and PASCAL languages with example programs; system level software; and a first guide to programming using the BASIC interpreted language. Some British data processing terminology such as "store" for "memory" is used, although those familiar with data processing will have no problem comprehending these terms in context.

Every day examples abound in the text, such as in Chapter 2:

> The computer store is considered as a series of sequentially numbered cells or words, so that we can indicate an operand by the "address" of the cell containing that operand. (It's a little like a prison where the cells are numbered and so are the convicts inside the cells—the operand is the convict's number and the address of the operand is his cell number.)

The use of programming language examples and the accompanying descriptive text are useful for those attempting to grasp an initial understanding of some actual programs. However, this book, is not a tutorial on programming. Rather, it will appeal to those learning data processing and who have a flair for the electronic, as well as the software, side of the field.

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**Library Networks, 1981-82,** by Susan K. Martin. White Plains, N. Y., Knowledge Industry Publications, Inc., 1981. $29.50 cloth; $24.50 paper. 159 p. ISBN 0-914236-66-0.

Those families with *Library Networks, 1978–79* will have little troubles putting this new edition to work. Readers may, however, experience occasional rushes of *deja vu.* In an enlarged format, 159 pages versus 144 pages, Martin has skillfully applied her blue pencil in revising the work. Superficially, text appears to be the same as the earlier edition, with only a few word changes, but in fact, the text has been reexamined and rewritten from beginning to end. Necessary updates have been made and a significant amount of new information has been added.

The chapter titles remain the same with the exception of the final one, chapter eleven, which has been changed from "Networks and the Future" to "Networks and Libraries in the Years Ahead." It has been expanded to include a discussion of the links between databases and database users, public access, regionalization, the interface between public and private sectors, the direction of network development, and a network for the future.

The appendix, which again is the "Directory of Networks and Members," has been increased from 39 to 43 years. Including OCLC, 26 entries appear in the 1978–79 edition, while only 22 entries are in the 1981–82 edition. Significantly, OCLC has been removed from this edition's appendix, which eliminates the profile of OCLC contained in the previous edition. However, OCLC is mentioned frequently throughout the text.

A useful glossary has been added. Some of the terms will be readily recognized by most readers. Some terms with not so obvious meanings such as "packet switching" and "value-added network," are defined thereby helping to advance the development of universally understood language in this field.

The volume has been attractively designed with cover graphics that reflect the computerized thrust of the technology. The text, too, is well laid out with usable section headings, all of which contribute to a readable book. Readers who have a need for library network information will continue to benefit from Martin's contribution.

**Robert W. Gibson, Jr.**
**Neville L. Grow, Jr.**
**GM Research Laboratories Library**
**GM Technical Center**
**Warren, MI**

**Picture Librarianship,** by Hilary Evans. (Outlines of Modern Librarianship Series.) New York, K.G. Saur, 1980. $12.00. ISBN 0-89664-428-6.

Picture Librarianship is a concise overview of the profession, defining its role, scope, and varied purposes in the field of information science. Evans' premises are presented with a clear understanding of the underlying differences and philosophical choices inherent in picture librarianship that distinguish non-book librarians from their colleagues in the print media.

The text is divided into nine chapters: defining picture libraries, acquisition, care and maintenance, access and retrieval, classification and cataloging, lending and copying, service charges, copyright, and administration. Included is a list of six British picture organizations and a brief bibliography and index.

It is evident that British picture librarianship shares with its North American counterpart many of the same problems concerning professional role definition and recognition, as well as shortcomings in academic training. Readers may wish to do further reading in a field which is only beginning to come into the fore in professional literature and journals. Much collatoral literature in the field of slide librarianship has been published during the last ten years.

Though it lacks a strong, supporting bibliography and source lists or suggestions which could make it a more valuable text, *Picture Librarianship* should be of interest to library schools, picture libraries, and collections.

**Stanley W. Hess**
**Spencer Art Reference Library**
**Nelson Gallery**
**Atkins Museum,**
**Kansas City, Mo.**

**Directions for the Decade: Library Instruction in the 1980s.** Carolyn A. Kirkendall, ed. Ann Arbor, Mich., Pieran Press, 1981.

This work brings together the papers presented at the 10th Annual Conference on Library Orientation for Academic Libraries held at Eastern Michigan University on May 8-9, 1980. The Conference was an occasion for reflecting on progress made in the past 10 years in this area of librarianship and also for addressing issues of interest for the next decade. The volume includes a brief introduction, seven major papers, and 10 shorter papers given in two panel sessions, an annotated bibliography of works published in 1979, and a list of the participants attending the Conference. The major papers cover almost all aspects of bibliographic instruction (BI) from assessment of programs to its professionalization as a distinct segment of librarianship to the seemingly less important topic of library sign systems. The shorter papers, though presented in panel style, were not theme-oriented but "opinion-statement papers" in which those engaged in BI could candidly share their views and concerns with the audience. Such topics as personal characteristics of the instructor, the role of the administrator, the necessity for a theoretical base for BI, and the failure to make information a real value in the lives of students were treated.

The overall impression one gets from reading these papers is that BI is a far cry from the old library orientation programs traditionally given at undergraduate colleges; it has become much more complex and sophisticated. Its proponents have raised serious and thought-provoking questions. Some of the papers, particularly the shorter ones, are largely observation and opinion; others, however, discuss issues that might be of interest to librarians and information professionals on many levels.

Keresztesi, for example, in his "Bibliographic Instruction in the 1980s and Beyond" raises questions regarding the librarian's role in the bibliographical education of the researcher. The old concept of bibliography being largely inventorial and descriptive, he maintains, is too narrow to use in dealing with modern researchers. It is an intellectual pursuit concerned with how knowledge is generated, organized, formatted, packaged, and communicated—the total information apparatus of a discipline. For the librarian, this means it is important not only to study access to its literature, but to analyze, describe, evaluate, and interpret the information apparatus of that discipline

in light of the logistical objectives it is called on to serve. Frances Hopkins, in her paper on BI as an emerging professional discipline, questions whether instruction librarians should attempt to transform academic libraries into supportive elements for integrated instruction or clearly differentiate themselves organizationally from the "stultifying bureaucratic and technocratic mold of conventional librarianship" without breaking the necessary practical connection with the physical library. Acknowledging that technical and administrative problems are serious and persistent, she opts for the latter even in the face of likely charges of elitism and intellectual pretension. Perhaps the most encouraging and thought-provoking paper is Huston-Miyamoto's on "Computer-Assisted Instruction in Libraries: Past, Present and Future," in which she explores the variety of ways in which computers can be utilized in the instruction process for students, and faculty and staff as well.

Not all the papers express satisfaction with the BI concept. Sween, for example, is skeptical about whether there is a real need for students to know how to use the library; he poses the interesting question of whether it would even be feasible with a fairly successful BI program to handle the workload it would generate. (In his hypothetical model, an institution of 5,000 students with a library open 80 hours a week should have 62.5 serious questions per hour.)

Although much of the material in this volume is of interest primarily to those involved in BI, there is also much that should be of interest to special librarians, particularly those in academic libraries or those in more specialized libraries who are trying to provide some type of user education in their libraries.

**Lucille Whalen**
**School of Library and**
**Information Science**
**State University of New York**
**Albany, N.Y.**

**The Library and Information Manager's Guide to Online Services,** edited by Ryan E. Hoover. Professional Librarian Series. White Plains, N.Y., Knowledge Industry Publications, Inc., 1980. $29.50 cloth; $24.50 paper. LC 80-21602. ISBN 0-914236-60-1.

Although the library literature is replete with hundreds of articles, chapters, reports and monograph-length works dealing with various aspects of online searching and services, there has been a need for a one-stop source of information written in an easily digested manner for the librarian, library services manager, or graduate student in library science who has little or no exposure to this specialty. This book fulfills that need. A comprehensive range of topics is discussed, leading the reader from a general overview of online information retrieval to more specialized chapters, each written by a knowledgeable authority.

The writing in this volume is uniformly excellent. Each chapter is referenced so that readers desiring additional detail can easily move to appropriate, highly current or classic sources. The glossary of terms will be especially useful to those who are new to the topic. For those who are considering starting online services in their libraries, as well as for students, the inclusion of example forms, e.g., search requests, search logs, user search evaluation forms, statistics sheets, and so on, taken from user libraries such as those at the University of Utah and Princeton University will be appreciated.

Although much of the tabular data, such as connect time charge rates or offline print rates are bound to change, nonetheless this information is useful for comparing costs among a variety of databases and for preliminary planning in the cost assessment area. The chapter dealing with the mechanics of searching will be appreciated by management and entry-level personnel who do not have any exposure to what happens in an interactive process session with a computer.

If any criticism is due, it might be directed at the lack of the editor's own critical comments and prognosis of the future in the last chapter, although this chapter does well at synthesizing the future predictions of the gurus of online systems. This book is one of the largest in terms of page count and content in the Professional Librarian Series. It is worth the price, particularly as an addition to the individual library manager's on nondatabase librarian's collections. Special librarians who may be knowledgeable in certain special areas will also find this a useful source of information to quickly assess the availability and cost of other databases which they might have need to use.

Library managers and special librarians serving graduate library school programs or professional staff libraries should seriously consider adding this title.

**Audrey N. Grosch**
**Library Systems Department**
**University of Minnesota Libraries**

# PUBS

**(81-023) Monographic Searching on the OCLC Terminal: A Programmed Text with Teacher's Guide.** Jimmie Davis and Josefa Abrera. Hamden, Conn., Linnet Books, 1981. 136 p. $14.50 (pbk). ISBN 0-208-01843-3.

This manual is designed to provide new users of the OCLC, Inc., model 100 or 105 cathode-ray tube terminal with a basic introduction to its operation in programmed instruction format.

**(81-024) Women View Librarianship: Nine Perspectives.** Kathryn Renfro Lundy. Chicago, Ill., American Library Association, 1980. 108 p. $7.00 (pkb). LC80-23611; ISBN 0-8389-3251-7.

This book presents interviews conducted with nine women who have occupied high administrative positions in libraries and library schools. The women discuss the perceptions incident upon their advancement in administration and suggest the implications for librarianship of emerging developments within the field and beyond.

**(81-025) Cataloguing.** Eric J. Hunter and K.G.B. Bakewell. Hamden, Conn., Shoe String Press, Inc. 197 p. $12.00. ISBN 0-95157-267-7.

Provides a comprehensive overview of cataloging, and some alternatives to cataloging.

**(81-028) Archives and Manuscripts: Exhibits.** Gail Farr Casterline. Chicago, Ill., The Society of American Archivists, 1980. 70 p. $7.00. LC 80-80072; ISBN 0-931828-18-X.

This new manual is a practical "how-to" guide for persons planning exhibits of archival materials. It contains chapters on planning and development conservation, design and technique, program coordination and administration considerations. The appendices include sample forms and a list of suppliers of exhibit equipment.

**(81-027) Management Information: Where to Find It.** Marilyn Taylor Thompson. Metuchen, N.J., The Scarecrow Press, Inc., 1981. 272 p. ISBN 0-8108-1424-2.

A bibliography of resources intended as a guide for librarians who are building collections of management sources. Emphasis is placed on 1) management in general, 2) specific aspects of management, such as organization development, management information systems, and personnel administration, and 3) specific types of management, such as public administration.

**(81-028) The Card Catalog: Current Issues, Readings and Selected Bibliography.** Cynthia C. Ryans, ed. Metuchen, N.J., The Scarecrow Press, Inc., 1981. 336 p. $16.00. LC 81-720; ISBN 0-8108-1417-X.

Furnishes the reader, through a series of readings and a comprehensive bibliography, with an overview of the steps necessary in determining the future of the card catalog. This anthology of 40 articles provides background information on the future of the card catalog, the options available as an alternative to a card catalog, and case examples of how some libraries have reacted to this situation.

**(81-029) Stack Management: A Practical Guide to Shelving and Maintaining Collections.** William J. Hubbard. Chicago, Ill., American Library Association, 1981. 112 p. $7.00 (pbk). LC 80-28468.

Offers practical solutions to this important part of circulation work. The book recommends procedures and discusses shelving designs and alternative methods of storage. Also gives advice on dealing with the special problems entailed by use of a large, part-time staff.

**(81-030) The Professional Development of the Librarian and Information Worker.** Patricia Layzell Ward, ed. London, Aslib, 1980. 332 p. ISBN 0-85142-1350.

Brings together in a single volume selections of writings on a theme of central importance to librarianship and information work. The selections are grouped into five sections: library and information science; research; philosophy and ethics; the planning of services; and human and technical aspects of management.

**(81-031) Introduction to Technical Services for Library Technicians.** Marty Bloomberg and G. Edward Evans. Littleton, Colo., Libraries Unlimited, Inc., 1981. $12.00 ISBN 0-87287-228-9; ISBN 0-87287-3 (pbk).

This text presents materials appropriate for an introduction to technical service for paraprofessional staff. Gives a thorough treatment to subjects such as: descriptive and subject cataloging to bring it in line with the second edition of the Anglo-American Cataloging Rules (AACR2); acquisition work; bibliographic verification; order procedures; gift and exchange processes, computers and library automation.

**(81-032) Basics of Online Searching.** Charles T. Meadow and Pauline Cochrane. N.Y., John Wiley and Sons, 1981. $15.95. ISBN 0-471-05283-3.

The purpose of this book is to teach the principles of interactive bibliographic searching, or information retrieval, to those with little or no prior experience. It attempts to teach principles rather than the detailed mechanics of any particular system. The major intended audience consists of students, working information specialists and librarians, and end users—the people for whom all this searching is done.

**Wanda Kemp**

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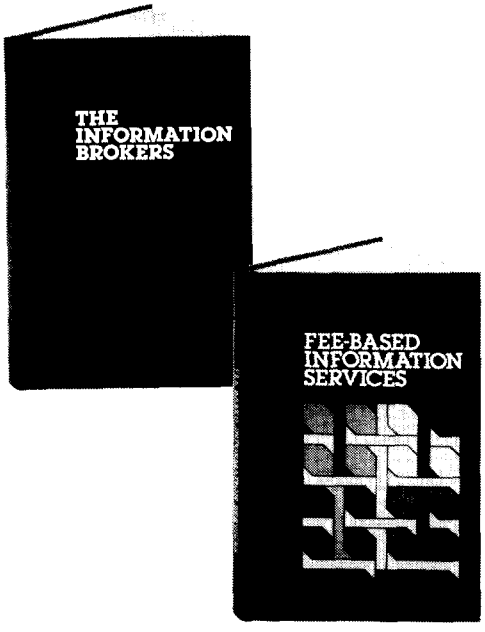


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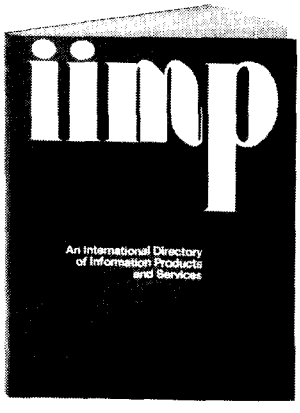


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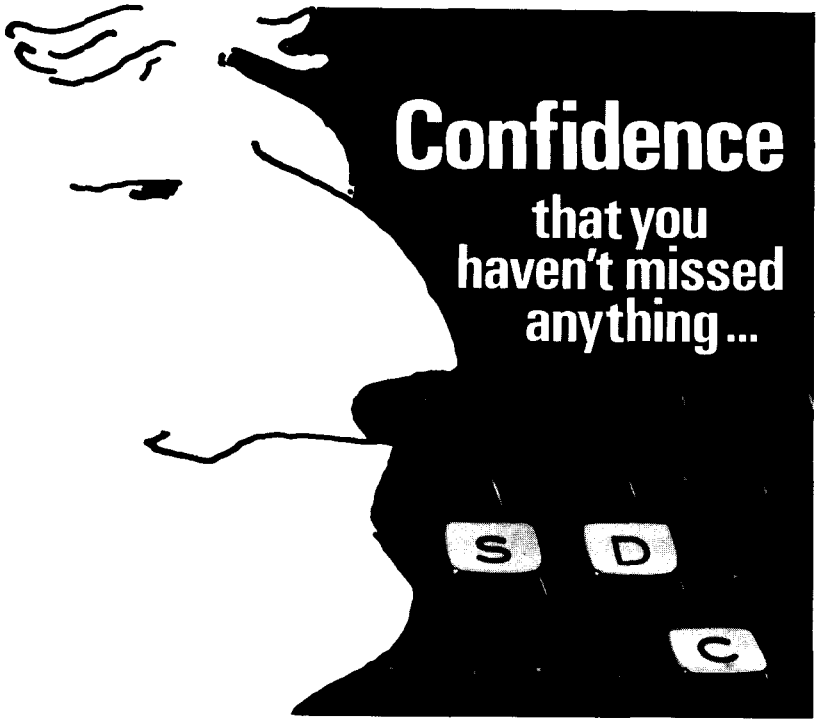


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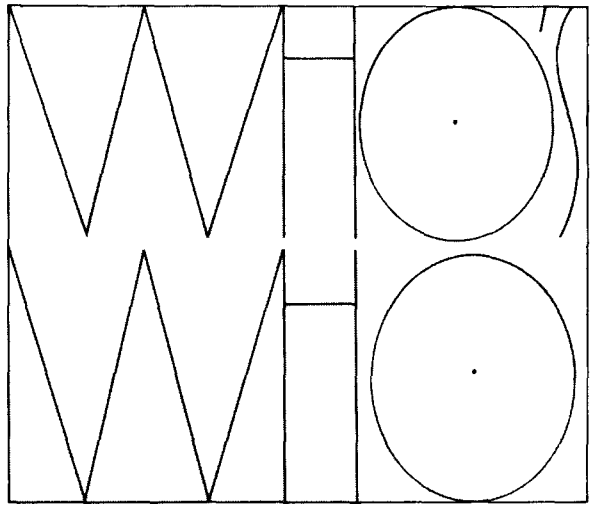


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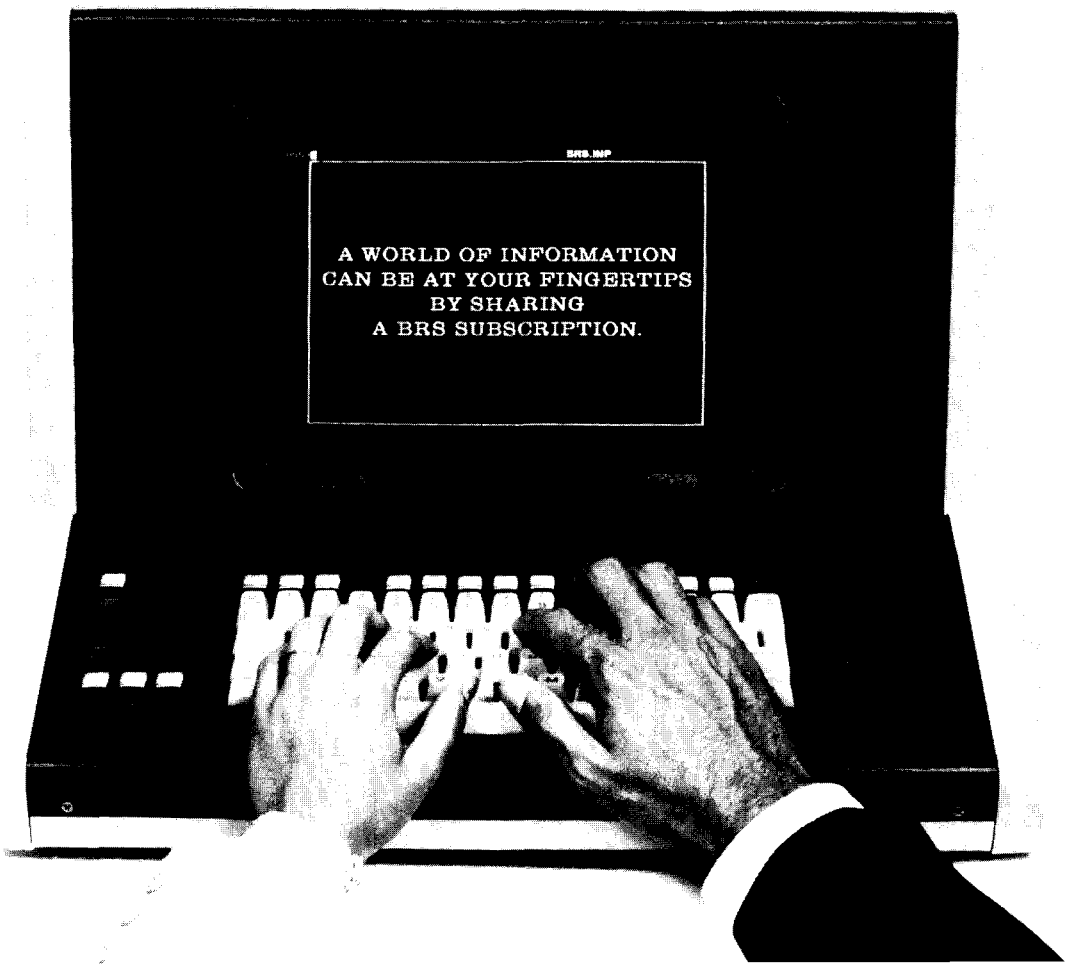

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**American Society for Information Science**
**45th Annual Meeting**
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**FOR FURTHER INFORMATION CONTACT:**

John Fried—Room SL
ASIS–82 Technical Program Chairman
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### ERRATA

**Dec 1980, p. 541** ..... **The SLA 1980 Salary Survey Update contains incorrect figures in Table 1. The percentage change in the median salary from 1979 to 1980 for the East South Central census region should read (4.0); the percentage change in the mean salary for that region should read (8.0).**

**Nov 1980, pp. 494-495** .. **Figures 1 and 2 in Lynda W. Moulton's article "Word Processing Equipment for Information Centers" contain a number of discrepancies from the author's specifications. If readers try to reproduce the catalog entry in Figure 3 by using the input and format in Figures 1 nd 2 they will fail.**

**Jul 1981, p. 242** ..... **The following correction should be noted for Patricia Cupoli's article, "Reference Tools for Data Processing, Office Automation, and Data Communications: An Introductory Guide." *The Million Dollar Directory,* listed on p. 242 in the Appendix to the article, is published by Dun & Bradstreet and not by Standard & Poor's Corporation.**

**Jul 1981, p. 301** ..... **Our apologies are due to Dorothy Kasman, whose name was omitted from the list of SLA officers. Kasman will continue to serve as Treasurer during 1981/82.**

# Directory of Special Libraries Association
# Officers, Committees, Representatives

OCTOBER 1981

# PICTURE SOURCES 4

Nominations are now being solicited for new listings in **Picture Sources 4,** the fourth edition of the directory of North American picture collections published by the Picture Division of the Special Libraries Association.

Nominations are required only for collections not listed in **Picture Sources 3;** all collections listed in the previous edition will automatically receive a questionnaire seeking updated information.

**Picture Sources 4** will list both commercial and non-commercial picture sources of all types; however, certain limitations apply to listing of stock files of individual photographers. These stock files will be included only if they contain 10,000 or more images and have one or more subject specialties with at least 2,000 images.

The nominations should include only the following information:

- name of the collection;
- contact person and title;
- and complete mailing address. Nominated collections will be sent a questionnaire seeking further information for the listing. The final decision for inclusion in **Picture Sources 4** will be based on the response to the questionnaire.

Information on collections not previously listed should be sent—on a 3″ x 5″ card, if possible—to:

Ernest H. Robl, Executive Editor, **Picture Sources 4,** P.O. Box 4547, Duke Station, Durham, N.C. 27706

**Picture Sources** is a standard reference source for picture editors at book and periodical publishers, as well as for individual researchers seeking all types of illustrations from woodcuts and engravings to posters and color transparencies. Publication of **Picture Sources 4** is expected in late 1982. The previous edition was published in 1975. **Picture Sources 4** will use computer processing of listings to generate indexes and to facilitate updating for future editions.

*Alabama (est. 1953)*

President, MARCIA BYSTROM, Tennessee Valley Authority, Technical Library, Muscle Shoals, AL 35660 [205/386-2871]; president-elect, PHILIP D. LAWRENCE, West Point Pepperell, Inc., Research Center Library, P.O. Box 398, Shawmut, AL 36876 [205/756-7111 ext. 2135]; secretary/treasurer, JAMES A. THOMPSON, Lister Hill Library of the Health Sciences, University of Alabama, University Sta., Birmingham, AL 35294 [205/934-3306]; bulletin editor, DRUCILLA S. GAMBRELL, Tennessee Valley Authority, Technical Library, Muscle Shoals, AL 35660 [205/386-2871].

*Arizona (est. 1978)*

President, ROBERT BERK, Graduate Library School, University of Arizona, Tucson, AZ 85719 [602/626-5219]; president-elect, SHARON SEIDE, Health Sciences Center Library, University of Arizona, Tucson, AZ 85721 [602/626-6125]; secretary, MARY GILBERT, Pima Council on Aging Library, 100 E. Alameda, Suite 406, Tucson, AZ 85701 [602/624-4419]; treasurer, JUDITH GORMAN, Valley National Bank Library, P.O. Box 71(A-315), Phoenix, AZ 85001 [602/261-2456]; bulletin editor, ELAINE RAINES, Arizona Daily Star Library, 4850 S. Park, Tucson, AZ 85714 [602/294-4433 ext. 345].

*Baltimore (est. 1930)*

President, JOSEPH E. JENSEN, Medical & Chirugical Faculty Library, 1211 Cathedral St., Baltimore, MD 21201 [301/539-0872]; president-elect, ANNE SHAW BURGAN, Enoch Pratt Free Library, 400 Cathedral St., Baltimore, MD 21201 [301/396-5328]; secretary, MAXINE BOODIS, Mayor's Office of Manpower Resources, Library, 701 St. Paul St., Baltimore, MD 21202 [301/396-3748]; treasurer, DIANA CUNNINGHAM, Enoch Pratt Free Library, 400 Cathedral St., Baltimore, MD 21201 [301/396-4042]; bulletin editor, CAROLYN DELAVAN, Maryland Department of Legislative Reference Library, 90 State Circle, Annapolis, MD 21401 [301/841-3810].

*Boston (est. 1910)*

President, RUTH K. SEIDMAN, U.S. Environmental Protection Agency, Reg. I, 2100-B JFK Federal Bldg., Boston, MA 02203 [617/223-5791]; president-elect, HOPE COFFMAN, Charles Stark Draper Lab., Inc., 555 Technology Sq., Mail Sta. 74, Rm. 4100, Cambridge, MA 02139 [617/258-3555]; secretary, SUSAN BAUGHMAN, Harvard University School of Education, Gutman Library, 6 Appian Way, Cambridge, MA 02138 [617/495-4225]; treasurer, KATHLEEN A. LONG, Honeywell Electro-Optics Center Library, 2 Forbes Rd., Lexington, MA 02173 [617/862-6222 ext. 310]; bulletin editor, JOHN CRONIN, Boston Herald American, 300 Harrison Ave., Boston, MA 02106 [617/426-3000 ext. 580].

*Central Ohio (est. 1963 as Dayton Chapter)*

President, LYNN HEER, State Library of Ohio, 65 S. Front St., Columbus, OH 43215 [614/462-6960]; president-elect, JUDITH HECHT, University of Dayton Research Institute, 300 College Park Ave., Dayton, OH 45469 [513/229-3024]; secretary, CAMILLE D. GREENWALD, Columbia Gas System Service Corp., 1600 Dublin Rd., Columbus, OH 43215 [614/422-1744]; treasurer, SHARON SCHWERZEL, Ohio State University, Biological Science Library, 1735 Neil Ave., Columbus, OH 43210 [614/422-1744]; bulletin editor, BEVERLY KAUSHAGEN, Bell Telephone Lab., 1200 E. Broad St., Columbus, OH 43213 [614/868-3696].

*Central Pennsylvania (est. 1979)*

President, BILL WOODRUFF, Hershey Foods Corp., 1025 Reese Ave., Hershey, PA 17033 [717/534-5106]; president-elect, SALLY WAYMAN, Pattee Library E108, Pennsylvania State University, University Park, PA 16802 [814/865-6368]; secretary, LOUISE GARRAUX, Pattee Library E506, Pennsylvania State University, University Park, PA 16802 [814/865-1755]; treasurer, DEL SWEENEY, Pennsylvania State University, PA Transportation Institute/Res. Bldg. B, University Park, PA 16802 [814/865-1891]; bulletin editor, BEVERLY RENFORD, Milton S. Hershey Medical Center Library, Pennsylvania State University, Hershey, PA 17033 [717/534-8634].

# CHAPTERS

*Cincinnati (est. 1927)*

President, THEODORE ALLAN MORRIS, Kettering Lab. Library, University of Cincinnati Medical Center, Cincinnati, OH 45267 [513/872-5771]; president-elect, SANDRA SPRINGER, Merrell Dow Pharmaceutical, 2110 E. Galbraith Rd., Cincinnati, OH 45215 [513/948-9111 ext. 2471]; secretary, JO ANN JOHNSON, U.S. EPA Research Center Library, 26 W. St. Clair St., Cincinnati, OH 45268 [513/684-7701]; treasurer, FREDERICK MARCOTTE, Clermont General & Technical College Library, College Drive, Batavia, OH 45103 [513/732-2990 ext. 13]; bulletin editor, DEBBIE TUCKER, Cincinnati Technical College Library, 3520 Central Pkwy., Cincinnati, OH 45223 [513/559-1520].

*Cleveland (est. 1927)*

President, NANCY H. SHERWIN, Cleveland Heights-University Heights Public Library, 2345 Lee Rd., Cleveland Heights, OH 44118 [216/932-3600 ext. 31]; president-elect, JEANNE L. BOHLEN, Foundation Center-Cleveland, 739 National City Bank Bldg., Cleveland, OH 44114 [216/861-1933]; secretary, BETTY MAYNARD, Federal Reserve Bank of Cleveland, Research Library, E. 6th St. & Superior, Cleveland, OH 44101 [216/579-2053]; treasurer, MARY D. WOOD, Standard Oil Co., Research Center, 4440 Warrensville Center Rd., Warrensville Heights, OH 44128 [216/581-5632]; bulletin editor, JOHN S. PIETY, John Carroll University-Grasselli Library, 20700 North Park, University Heights, OH 44118 [216/491-4231].

*Connecticut Valley (est. 1934)*

President, MELANIE C. SZE, Standard Brands Inc., 15 River Rd., Wilton, CT 06897 [203/762-2500]; president-elect, DOTTIE SHERMAN, American Nuclear Insurers, 270 Farmington Ave., Farmington, CT 06032 [203/677-7305]; secretary, LEE RUSSELL, AVCO/Lycoming, 550 South Main St., Stratford, CT 06497 [203/878-8211]; treasurer, ROCHELLE P. KRAMER, Wire Association International, 1570 Boston Post Rd., Guilford, CT 06437 [203/453-2777]; bulletin editor, JOSEPH A. MILLER, Yale Forestry Library, 205 Prospect St., New Haven, CT 06511 [203/436-0577].

*Eastern Canada Chapter/Section de l'est du Canada (est. 1932 as Montreal Chapter)*

President, ANTOINETTE CICKELLO, Canadian Pacific Limited, Public Relations & Advertising Information Centre, P.O. Box 6042, Station "A," Montreal, Que., Canada H3C 3E4 [514/395-7689]; president-elect, GILDA MARTINELLO, Canadian National Railways, Dechief Library, P.O. Box 8100, Montreal, Que., Canada H3C 3N4 [514/877-5234]; secretary, ELIZABETH WINIARZ, Concordia University, Science & Engineering Library, 1445 de Maisonneuve Blvd. West, Montreal, Que., Canada H3G 1M8 [514/879-4511]; treasurer, LINDA PERRON, Bell Northern Research, Technical Information Centre, Dept. 8E21, P.O. Box 3511 Station "C," Ottawa, Ont., Canada K1Y 4H7 [613/226-5400 ext. 2945]; bulletin editor, DEANNA LALANDE, McGill University, Medical Library, 3655 Drummond St., Montreal, Que., Canada H3G 1Y6 [514/392-4339].

*Florida (est. 1969)*

President, HELEN JANE ARMSTRONG, University of Florida University Libraries, Map Library, Gainesville, FL 32611 [904/392-0803]; president-elect, SUZANNE YODER, State University System of Florida Extension, 1011 First Ave. North, St. Petersburg, FL 33705 [813/893-9120]; secretary, PATRICIA BOODY, Florida Institute of Phosphate Research, 250 North Central Ave., Bartow, FL 33830 [813/533-0983]; treasurer, SHARYN J. LADNER, Behavior Science Research Institute, 1000 Ponce de Leon Blvd., Coral Gables, FL 33134 [305/488-7622]; bulletin editor, PHYLLIS D. FREEDMAN, Orlando Municipal Reference Librarian, City Hall, 400 South Orange, Orlando, FL 32801 [305/849-2249].

*Hawaiian Pacific (est. 1972)*

President, ANN L. MARSTELLER, Alfred A. Yee & Associates, Inc., 1441 Kapiolani Blvd., Suite 810, Honolulu, HI 96814 [808/946-3161]; president-elect, ALICE D. HARRIS, East-West Center Population Institute, 1777 East-West Rd., Honolulu, HI 96848 [808/944-7451]; secretary, MARJORY A. WAITE, Hawaii Medical Library, 1221 Punchbowl St., Honolulu, HI 96813 [808/536-9302]; treasurer, CHRISTINE F. TOMOYASU, Hamilton Library, University of Hawaii, Honolulu, Hawaii, 96822 [808/948-7214]; bulletin editor, SEE PRESIDENT-ELECT.

*Heart of America (est. 1948)*

President, MARIANN CYR, Engineering Library, University of Kansas, Satellite Union, Rm. 115, Lawrence, KS 66045 [913/864-3866]; president-elect, VALERIE SMITH, Medical Library, Trinity Lutheran Hospital, 31st & Wyandotte Sts., Kansas City, MO 64108 [816/753-4600 ext. 637]; secretary, KATHY HUGHES, Medical Library, Spencer Center, St. Luke's Hospital, 44th at Wornall Rd., Kansas City, MO 65111 [816/923-2333]; treasurer, JOHN RUSSELL, Johnson County Community College, College Blvd. at Quivira Rd., Overland Park, KS 66210 [913/888-8500 ext. 286]; bulletin editor, NOT REPORTED.

*Hudson Valley (est. 1973)*

President, MARY KLANIAN, IBM Business Reference Library, Old Orchard Rd., Armonk, NY 10504 [914/765-6010]; president-elect, THEODORA REARDON, Clairol Research Libr., 7 Blachley Rd., Stamford, CT 06902 [203/357-5001]; secretary/treasurer, DIANA KOSTER, Yonkers Public Library/Technical & Business Dept., 70 South Broadway, Yonkers, NY 10701 [914/337-1500 ext. 60]; bulletin editor, NANCY BACHMAN, Library/Consumers Union, 256 Washington St., Mt. Vernon, NY 10550 [914/664-6400 ext. 269].

*Illinois (est. 1925)*

President, JUDY GENESEN, Chicago Transit Authority, Merchandise Mart, P.O. Box 3555, Chicago, IL 60654 [312/664-7200 ext. 4947]; president-elect, JOHN KOK, Foote, Cone & Belding, 401 N. Michigan, Chicago, IL 60611 [312/467-9200 ext. 1954]; secretary, CHARLES J. LAGRUTTA, Urban Investment & Development Co., 845 N. Michigan Ave., Rm. 800, Chicago, IL 60611 [312/440-3296]; treasurer, CAROL ANN IRONS, Harza Engineering Company, 150 S. Wacker Drive, 15th Fl., Chicago, IL 60606 [312/855-7192]; bulletin editor, ALETHA KOWITZ, American Dental Association, Bureau of Library Services, 211 E. Chicago Ave., Rm. 1901, Chicago, IL 60611 [312/440-2642].

*Indiana (est. 1941)*

President, MARY HARTZLER, Indiana State Library, 140 North Senate Ave., Indianapolis, IN 46204 [317/232-3685]; president-elect, MARY BONHOMME, Cabot Corporation, Stellite Div., Kokomo, IN 46901 [317/456-6140]; secretary, LYNN CONNOR, Marion County Law Library, City-County Bldg., 200 E. Washington, Indianapolis, IN 46204 [317/633-3643]; treasurer, WILLIAM MAYLES, Indiana University-Purdue University at Indianapolis, 1201 East 38th St., Indianapolis, IN 46205 [317/923-1325 ext. 339]; bulletin editor, MONICA MOFFA, Indiana University School of Dentistry, 1121 West Michigan St., Indianapolis, IN 46202 [317/264-7204].

*Kentucky (est. 1972)*

President, RUTH ALLEN, The Gatherfacts Group, 255 Kennedy Court, Louisville, KY 40206 [502/896-0943]; president-elect, SHIRLEY DEMOS, Urban Studies Center, University of Louisville, Louisville, KY 40204 [502/588-6626]; secretary/treasurer, NORMA BRAVER, University of Louisville, Health Sciences Library, Louisville, KY 40202 [502/588-5771]; bulletin editor, ROBERT S. JACK, University of Kentucky NASA/UK, 109 Kinkead Hall, Lexington, KY 40506 [606/258-4632].

*Long Island (est. 1972)*

President, LISE RASMUSSEN, Long Island University, C.W. Post Center, Business Reference Library, Greenvale, NY 11548 [516/299-2833]; president-elect, JOHNN PATTON, JR., Suffolk Cooperative Library System, 627 North Sunrise Service Rd., Bellport, NY 11713 [516/286-1600]; secretary, NANCY BREECE, Long Island University, C.W. Post Center, Business Reference Library, Greenvale, NY 11548 [516/299-2872]; treasurer, BARBARA SHUPE, State University of New York—Stony Brook, Main Library, Map Collection, Stony Brook, NY 11794 [516/246-5976]; bulletin editor, RICHARD REID, Long Island University, C.W. Post Center, Center of Economics Research, Greenvale, NY 11548 [516/299-2832].

# CHAPTERS

*Louisiana (est. 1946)*

President, HARRIET CALLAHAN, Louisiana State Library, P.O. Box 131, Baton Rouge, LA 70821 [504/342-4914]; president-elect, TOMMY S. HOLTON, Dillard University Media Center, 2601 Gentilly Blvd., New Orleans, LA 70150 [504/949-2123]; secretary/treasurer, SALLIE HONEYCHURCH, State Times & Morning Advocate, 525 Lafayette St., Baton Rouge, LA 70802 [504/383-1111]; bulletin editor, CONNIE L. BIHON, Pennzoil Co., Research Development Dept. Library, P.O. Box 6199, Shreveport, LA 71106 [318/861-4531].

*Michigan (est. 1929)*

President, JUDITH J. FIELD, Flint Public Library, General Ref. Dept., 1026 E. Kearsley St., Flint, MI 48502 [313/232-7111, ext. 48]; president-elect, JENNIE B. CROSS, Oakland School, ED Resource Cent/REMC-17, 2100 Pontiac Lake Rd., Pontaic, MI 48054 [313/858-1969]; secretary, STEPHEN C. LUCCHETTI, University of Michigan, Chemistry Library, 2000 Chemistry Bldg., Ann Arbor, MI 48109 [313/764-7337]; treasurer, LOIS W. COLLET, D'Arcy MacManus & Masius, P.O. Box 811, Bloomfield Hills, MI 48013 [313/646-1000 ext. 305]; bulletin editor, MARY FRANCES MULLIN, General Motors Corp., Industrial Government Relations, 11-153 GM Bldg., Detroit, MI 48202 [313/556-3628].

*Mid-Missouri (est. 1973)*

President, EDWARD P. MILLER, University of Missouri-Columbia, 104 Stewart Hall, Columbia, MO 65211 [314/882-4546]; president-elect, MARY ELLEN SIEVERT, University of Missouri-Columbia, 113D Stewart Hall, Columbia, MO 65211 [314/882-4044]; secretary/treasurer, BARBARA HENSLEY, 2046 S. Wellington, Springfield, MO 65807 [417/882-7217]; bulletin editor, JUDITH L. HEGG, Columbia *Missourian*, 133A Neff Annex, University of Missouri-Columbia, Columbia, MO 65211 [314/882-4876].

*Mid-South (est. 1975 as Memphis Chapter)*

President, BETTY TURNER, The Newsfile Inc., 10 Shackleford Plaza, Suite 201, Little Rock, AK 72211 [501/225-5999]; president-elect, W. ELLEN MCDONELL, University of Tennessee Center for the Health Sciences, Library, 800 Madison Ave., Memphis, TN 38163 [901/528-5634]; secretary/treasurer, ELIZABETH J. MCCORD, Memphis State University, Law School Library, Memphis, TN 38152 [901/454-2426]; bulletin editor, CAROLYN A. WILHITE, Library, W.R. Grace Co., Agricultural Chemical Group, P.O. Box 277, Memphis, TN 38101 [901/522-2385].

*Minnesota (est. 1943)*

President, MARYLS J. JOHNSON, FluiDyne Engineering Corporation, 5900 Olson Memorial Highway, Minneapolis, MN 55422 [612/544-2721]; president-elect, RICHARD G. REYNEN, Deloitte Haskins & Sells, 1950 IDS Tower, Minneapolis, MN 55402 [612/339-9744]; secretary, LOIS LENROOT-ERNT, Gale Research Co., 8800 Highway 7, Suite 300, Minneapolis, MN 55426 [612/938-2871]; treasurer, DONNA SLAMKOWSKI, Minnesota Energy Agency Library, 150 E. Kellogg Blvd., Rm. 980, St. Paul, MN 55101 [612/296-8902]; bulletin editor, JERRY BALDWIN, Minnesota Dept. of Transportation, B-26A Transportation Bldg., St. Paul, MN 55155 [612/296-2385].

*New Jersey (est. 1935)*

President, FLORENCE CLARK, Sun Chemical Corp., 631 Central Ave., Carlstadt, NJ 07072 [201/933-4500]; president-elect, ANN TALCOTT, Bell Telephone Labs, Rm. 6A-200A, 600 Mountain Ave., Murray Hill, NJ 07974 [201/582-4612]; secretary, LAUREL GOULD, Public Service Electric & Gas Co., 800 Park Plaza, Newark, NJ 07101, [201/430-7333]; treasurer, DEBORAH SPEER, Prudential Insurance Co., 4 Prudential Plaza, Newark, NJ 07101 [201/877-7194]; bulletin editor, NANCY LYNOTT, Perkin-Elmer Computer Systems, 106 Apple St., Tinton Falls, NJ 07724 [201/870-5889].

*New York (est. 1915)*

~~Chairman~~, MASHA ZIPPER, Price Waterhouse, 1251 Avenue of the Americas, New York, NY 10020 [212/489-8900 ext. 291]; president-elect, PATRICIA MARSHALL, American Institute of Aeronautics & Astronautics, 555 West 57th St., New York, NY 10019 [212/247-6500]; secretary, MARY GLASCOCK, Salvation Army Archives, 145 West 15th St., New York, NY 10011 [212/620-4394]; treasurer, MARIE GOREY, Johnson & Higgins, 95 Wall St., New York, NY 10005 [212/482-2495]; bulletin editor, BERT SCHACHTER, Ted Bates & Co., 1515 Broadway, New York, NY 10036 [212/869-3131].

**Advertising & Marketing Group.** Chairman, ELIZABETH SKERRITT, International Paper Co., 220 East 42nd St., New York, NY 10017 [212/490-5952].

**Business & Finance Group.** Chairman, JULIETTE LEVINTON, J. Henry Schroder Bank & Trust Co., One State St., New York, NY 10015 [212/269-6500].

**Communications Group.** Chairman, ANNE BIRNBAUM, Newsweek, Inc., 444 Madison Ave., New York, NY 10022 [212/350-2727].

**Information Technology Group.** Chairman, MALVIN VITRIOL, U.S. Veteran's Administration—NY VA Hospital, 408 First Ave., New York, NY 10010 [212/686-7500].

**Insurance Group.** Chairman, JEAN CARRIGAN, Equitable Life Assurance Society, 1285 Avenue of the Americas, New York, NY 10019 [212/554-2434].

**Museum, Arts, & Humanities Group.** Chairman, CLAIRE PETRIE, Pratt Institute—Art & Architecture Dept., 200 Willoughby Ave., Brooklyn, NY 11205 [212/636-3685].

**Social Sciences Group.** Chairman, LESLIE SIMMONS, Reader's Digest, 750 Third Ave., New York, NY 10017 [212/972-6368].

**Technical Sciences Group.** Chairman, GERALD MCKIERNAN, New York Botanical Garden, Bronx Park, Bronx, NY 10458 [212/220-8753].

*North Carolina (est. 1966)*

President, DIANE STRAUSS, University of North Carolina-Chapel Hill, Wilson Library 024A, Chapel Hill, NC 27514 [919/933-1151]; president-elect, GEORGIA RODEFFER, N.C. State University, School of Textiles Library, P.O. Box 5006 Nelson Hall, Raleigh, NC 27650 [919/737-3231 ext. 33]; secretary, JO ANNE BOORKMAN, University of North Carolina—Chapel Hill, Health Sciences Library 223 H, Chapel Hill, NC 27514 [919/966-2111]; treasurer, ROLLY SIMPSON, Burroughs Wellcome Co., 3030 Cornwallis Rd., Research Triangle Park, NC 27709 [919/541-9090 ext. 4377]; bulletin editor, SARA AULL, 201 W. Rice St., Landis, NC 28088 [704/857-2188].

*Oklahoma (est. 1956)*

President, DARRYL LOGAN, St. Francis Hospital, 6161 South Yale, Tulsa, OK 74177 [918/494-1210]; president-elect, CRAIG BUTHOD, Business & Technology Dept., Tulsa City County Library, 400 Civic Center, Tulsa, OK 74103 [918/581-5154]; secretary, NEVINE M. BUTCHER, 1921 Oakcreek Drive, Norman, OK 73071 [405/848-6631]; treasurer, PAT HOSKINS, Continental Oil Co.—Research & Development, P.O. Drawer 1267, Ponca City, OK 74601 [405/762-3456]; bulletin editor, LINDA HILL, Cities Service Co., Exploration & Production Research, P.O. Box 3908, Tulsa, OK 74102 [918/561-5267].

*Omaha Area Provisional (est. 1980)*

President, DONNA RICHARDSON, Boys Town Center for the Study of Youth Development, Omaha, NE 68164 [402/498-1422]; president-elect, NONE REPORTED; secretary/treasurer, REBECCA DIXON, Boys Town Center for the Study of Youth Development, Omaha, NE 68164 [402/498-1428]; bulletin editor, MORRIS HOFFMAN, InterNorth, Inc., 2223 Dodge, Omaha, NE 68102 [402/633-4925].

# CHAPTERS

*Oregon (est. 1973)*

President, BETTY MCCAULEY, U.S. Environmental Protection Agency, Corvallis Environmental Research Lab., 200 S.W. 35th St., Corvallis, OR 97330 [503/757-4731]; president-elect, MARCIA BUSER-MOLATORE, Precision Castparts Corp., 4600 S.E. Harney Drive, Portland, OR 97206 [503/777-3881 ext. 365]; secretary/treasurer, BARBARA CHALMERS, Portland General Electric Co., TB-7, 121 S.W. Salmon, Portland, OR 97204 [503/220-3071]; bulletin editor, JANE E. GAY, U.S. Court of Appeals—Library, Pioneer Courthouse, 555 S.W. Yamhill, Portland, OR 97204 [503/221-6042].

*Pacific Northwest (est. 1945 as Puget Sound Chapter)*

President, MAUREEN MCCREA, Kenworth Truck Co., P.O. Box 1000, Kirkland, WA 98033 [206/828-5255]; president-elect, ERLINDA COMPTON, Boeing Renton Technical Library, P.O. Box 3707 MS 74-60, Seattle, WA 98124 [206/237-8314]; secretary/treasurer, ANN MCQUAID, TRA, 215 Columbia, Seattle, WA 98104 [206/682-1133]; bulletin editor, BETSY DARRAH, Pacific Northwest Bibliographic Center, University of Washington, Seattle, WA 98195 [206/543-1878].

*Philadelphia (est. 1919)*

President, NANCY S. SELZER, E. I. DuPont de Nemours & Co., Haskell Lab., Elkton Rd., Newark, DE 19711 [302/366-5231]; president, JACQUELINE N. WEITZEL, P.Q. Co., Corporate Information Center, P.O. Box 840, Valley Forge, PA 19482 [215/293-7352]; secretary, JANET M. WOLVERTON, U.S. Dept. of Labor, ETA Resource Center, Room 13112, P.O. Box 8796, Philadelphia, PA 19101 [215/596-6349]; treasurer, DONNA M. ZOCCOLA, Friends Hospital, Roosevelt Blvd. & Adams Ave., Philadelphia, PA 19124 [215/831-4763]; bulletin editor, DOROTHY MCLAUGHLIN, Thiokol/Specialty Chemicals Div. Library, P.O. Box 8296, Trenton, NJ 08650 [609/396-4001].

*Pittsburgh (est. 1922)*

President, JOANNE S. KLEIN, Jones & Laughlin Steel Corp., 900 Agnew Rd., Pittsburgh, PA 15227 [412/884-1000 ext. 225]; president-elect, NANCY A. ALSTADT, Mobay Chemical Corp., Information Resource Center, Penn-Lincoln Parkway W., Pittsburgh, PA 15205 [412/777-2783]; secretary, MARGARET B. BROOKS, Aluminum Co. of America, Corporate Planning Dept. Library, 130 Alcoa Bldg., Pittsburgh, PA 15219 [412/553-4561]; treasurer, NANCY LEUZINGER, Dravo Corp., Library, One Oliver Plaza, Pittsburgh, PA 15222 [412/566-5075]; bulletin editor, MARY JANE VOLK, Carnegie-Mellon University, Mellon Institute Library, 4400 Fifth Ave., Pittsburgh, PA 15213 [412/578-3172].

*Princeton/Trenton (est. 1967)*

President, JANET WILLIAMS, Educational Testing Serv., Rosedale Rd., Princeton, NJ 08541 [609/734-5672]; president-elect, YVONNE SMITH, Mobil Oil Corp. Toxicology Info. Center, P.O. Box 1026, Princeton, NJ 08540 [609/452-9440]; secretary, PATRICIA GASPARI-BRIDGES, Geology Library, Princeton University, Princeton, NJ 08540 [609/452-3267]; bulletin editor, HINDA GREENBERG, 15 Carnation Place, Lawrenceville, NJ 08648 [609/771-0354].

*Rhode Island (est. 1977)*

President, JANE VITI SANFILIPPO, U.S. Navy, Naval War College, Library, Newport, RI 02840 [401/841-4551]; president elect, LINDA A. CRANSTON, Roger Williams College, Technical Services, Old Ferry Rd., Bristol, RI 02809 [401/255-2361]; secretary, IRENE M. LATHROP, Rhode Island Hospital, Peters House Medical Library, 593 Eddy St., Providence, RI 02902 [401/277-4671]; treasurer, JANICE F. SIEBURTH, University of Rhode Island, Library, Kingston, RI 02881 [401/792-5904]; bulletin editor, NOT REPORTED.

*Rio Grande (est. 1956)*

President, GLORIA J. ZAMORA, Sandia National Laboratories, Technical Library-3144, Albuquerque, NM 87185 [505/844-8426]; president-elect, LORRAINE LESTER, University of New Mexico Law Library, 1117 Stanford NE Albuquerque, NM 87131 [505/277-4058]; secretary, CAROL HUTCHINS, University of New Mexico General Library, University of New Mexico, Albuquerque, NM 87131 [505/277-5761]; treasurer, KASEY LAPLANTE, New Mexico Dept. of Energy & Minerals Library, P.O. Box 2770, Sante Fe, NM 87501 [505/827-2471 ext. 68]; bulletin editor, KAY KELLY, Sunbelt Mining Co., Inc., P.O. Box 2106, Albuquerque, NM 87103 [505/883-6630].

*Rocky Mountain (est. 1951 as Colorado Chapter)*

President, JOAN S. SEGAL, Bibliographical Center for Research, 245 Columbine St. #242, Denver, CO 80206 [303/388-9261]; president-elect, MARILYN STARK, Dames & Moore, 1626 Cole Blvd., Golden, CO 80401 [303/232-6262]; secretary, DIANE BROWN, Colorado School of Mines, Arthur Lakes Library, Golden, CO 80401 [303/279-0300 ext. 2699]; treasurer, TRACEY MILLER, University of Colorado, William White Business Library, Boulder, CO 80309 [303/492-8367]; bulletin editor, NOT REPORTED.

*St. Louis Metropolitan Area (est. 1941 as Greater St. Louis Chapter)*

President, MARY AVERSA, Doane Agricultural Service, Inc., 8900 Manchester Rd., St. Louis, MO 63144 [314/968-1000]; president-elect, LORI CALCATERRA, Washington University Olin Library, P.O. Box 1061, St. Louis, MO 63130 [314/889-5467]; secretary, MURIEL LINDSAY, Auto Club of Missouri, 201 Progress Parkway, Maryland Heights, MO 63043 [314/576-7350]; treasurer, STEPHANIE TOLSON, McDonnell Douglas Automation Co., P.O. Box 516, St. Louis, MO 63166 [314/233-5194]; bulletin editor, KAREN CHAPMAN, Monsanto Company Information Center, 800 N. Lindbergh, St. Louis, MO 63166 [314/694-4659].

*San Andreas (est. 1980)*

President, MARGE BOYD, Intel Corp., Technical Information Center, 2625 Walsh Ave., 4-106, Santa Clara, CA 95051 [408/987-6014]; president-elect, GWYNETH MALLISON, Ampex Corp., Technical Information Services, 401 Broadway, Redwood City, CA 96063 [415/367-3356]; secretary, CINDY HUTCHINSON, Acurex Corp., Technical Library, 485 Clyde Avenue MS 2-0212, Mountain View, CA 94042 [415/964-3200 ext. 3221]; treasurer, LINDA MCKELL, Four-Phase Systems, Inc., 10700 De Anza Blvd., Cupertino, CA 95014 [408/255-0900 ext. 2694]; bulletin editor, MARY GARBERINO, Ampex Corp., Technical Library, 485 Clyde Ave., MS 2-0212, Mountain View, CA 94042 [415/367-3356].

*San Diego (est. 1960)*

President, SHARON STEWART REEVES, Union-Tribune Library, P.O. Box 191, San Diego, CA 92112 [714/299-3131]; president-elect, JOAN SIERECKI, Neste, Brudin, Stone, Inc., P.O. Box 28100, San Diego, CA 92128 [714/485-1500]; secretary, KAREN E. FEENEY, University of California—San Diego, Science & Engineering Library, La Jolla, CA 92093 [714/452-3258]; treasurer, JOHN R. STEPHENS, San Diego Public Library, 820 E St., San Diego, CA 92101 [714/447-8463]; bulletin editor, SUSAN STARR, Scripps Institute of Oceanography, University of California—San Diego, CO 75 C, La Jolla, CA 92093 [714/452-4817].

*San Francisco Bay Region (est. 1924)*

President, DIAN S. GILMAR, Metropolitan Transporation Commission, Hotel Claremont, Berkeley, CA 94705 [415/849-3223]; president-elect, SARA M. CREW-NOBLE, Pacific Gas & Electric Co., 3400 Crow Canyon Rd., San Ramon, CA 94583 [415/820-2000 ext. 214]; secretary, ELLEN D. WOOD, Contra Costa Times, P.O. Box 5088, Walnut Creek, CA 94596 (415/943-8190]; treasurer, ANGELA BRUNTON, California Division of Mines & Geology, Ferry Bldg., Room 2022, San Francisco, CA 94111 [415/557-0308]; bulletin editor, MARC A. LEVIN, University of California, Institute of Governmental Studies Library, 109 Moses Hall, Berkeley, CA 94720 [415/642-1472 or 5699].

# CHAPTERS

*Sierra Nevada (est. 1975 as Sacramento Region Chapter)*

President, KATHLEEN M. ANDRADE, Lodi Public Library, 201 W. Locust St., Lodi, CA 95240 [209/334-3973]; president-elect, JOHANNA C. ROSS, University of California-Davis, Physical Sciences Library, Davis, CA 95616 [916/752-0347]; secretary/treasurer, ELIZABETH BOARDMAN, University of California-Davis, Shields Library, Davis, CA 95616 [916/752-2904]; bulletin editor, M. KAY MOWERY, California Dept. of Food & Agriculture, 1220 N. St., Rm. A-151, Sacramento, CA 95814 [916/322-5130].

*South Atlantic (est. 1952 as Georgia Chapter)*

President, MICHAEL MCDAVID, Equifax, Inc., Library, P.O. Box 4081, Atlanta, GA 30302 [404/885-8320]; president-elect, JUDY CASSELL, Coca-Cola Co., Marketing Information Center, P.O. Drawer 1734, Atlanta, GA 30301 [404/386-0462]; secretary, MARSI SIMPKINS, Emory University, Atlanta-Athens Area Union Catalog, Atlanta, GA 30322 [404/634-5726]; treasurer, BILL NEWTON, Coca-Cola Co. Business Information Services, P.O. Drawer 1734, Atlanta, GA 30307 [404/898-2953]; bulletin editor, CAROLYN MITCHELL, Environmental Protection Agency–Library, 345 Courtland St., Atlanta, GA 30365 [404/881-4216].

*Southern Appalachian (est. 1953 as Oak Ridge Chapter)*

President, MARGARET J. BULL, Tennessee Valley Authority Technical Library, E2 B8 400 Commerce Ave., Knoxville, TN 37902 [615/632-6173]; president-elect, DAPHNE F. DINSMORE, Oak Ridge National Lab., Central Research Library, 4500N, I103, P.O. Box X, Oak Ridge, TN 37830 [615/574-6726]; secretary, ETHEL Q. MCDONALD, Tennessee Valley Authority, 247 Union Bldg., Knoxville, TN 37902 [615/632-3283]; treasurer, GAIL PRESSLAR, Tennessee Eastman Co., Research Library, Bldg. 150B, Kingsport, TN 37662 [615/246-2111 ext. 2541]; bulletin editor, SEE SECRETARY.

*Southern California (est. 1927)*

President, S. KATHLEEN REILLY, Capital Research Co., 333 S. Hope St., 51st Fl., Los Angeles, CA 90071 [213/486-9261]; president-elect, RITA M. GURNEE, Mount San Antonio College, Educational Resource Center, 1100 N. Grand Ave., Walnut, CA 91789 [714/594-5611]; secretary, KAY E. SALM, Northrop Corp., Research & Technology Center, One Research Park, Mail Code 328/T20, Palos Verdes Peninsula, CA 90274 [213/377-4811 ext. 408]; treasurer, JULIA E. KEIM, Rockwell International Corp., Technical Information Center, 6633 Canoga Ave., BA29, Canoga Park, CA 91304 [213/884-2575]; bulletin editor, SUZANNE SHUSTER & JOAN STERN, LA Times, Editorial Library, Times Mirror Square, Los Angeles, CA 90053 [213/972-4759].

*Texas (est. 1949)*

President, SALLY POLLAK, University of Texas Health Science Center at San Antonio Library, 7703 Floyd Curl Drive, San Antonio, TX 78284 [512/691-6271]; president-elect, TERRY RYAN, Houston Academy of Medicine, Texas Medical Center Library, Jesse H. Jones Library Bldg., Houston, TX 77030 [713/797-1230]; secretary, PATRICIA PRATCHETT, United Service Automobile Association, Library, U.S.A.A. Bldg., San Antonio, TX 78288 [512/690-2900]; treasurer, MARY KATE AKKOLA, Society of Petroleum Engineers, 6200 N. Central Expressway, Dallas, TX 75206 [214/361-6601 ext. 231]; bulletin editor, MARY SENG, University of Texas at Austin, General Libraries, Austin, TX 78712 [512/471-5937].

*Toronto (est. 1940)*

President, BETTY A. BASSETT, Xerox Research Centre of Canada, 2480 Dunwin Drive, Mississauga, Ont., Canada L5L 1J9 [416/828-6200]; president-elect, STEPHANIE PAVLIN, Ontario Ministry of Transportation & Communications, 1201 Wilson Ave., Central Bldg., Downsview, Ont., Canada M3M 1J8 [416/248-3591]; secretary, DEIDRE GRIMES, Royal Bank of Canada, Royal Bank Plaza, 4th Fl., Toronto, Ont., Canada M5J 2J5 [416/856-2780]; treasurer, SUSAN MCDONALD, Imperial Oil Ltd., 111 St. Clair W., Toronto, Ont., Canada M5W 1K3 [416/968-4865]; bulletin editor, EDNA ALLEN, Warner-Lambert Reference Library, 2200 Eglinton Ave. E., Scarborough, Ont., Canada M1K 5C9 [416/750-2360].

*Upstate New York (est. 1945 as Western New York Chapter)*

President, BARBARA RICE, N.Y. State Library, Cultural Ed. Center, 6th Fl., Albany, NY 12230 [518/474-7869]; president-elect, NOT REPORTED; secretary, DOROTHY M. KRAUS, Smith & Mahoney Consulting Engineers, 79 N. Pearl, Albany, NY 12207 [518/463-4107]; treasurer, PHILIP R. DANKERT, Cornell University, Industrial & Labor Relations Lib., Ithaca, NY 14853 [607/256-5435]; bulletin editor, LINDA PHILLIPS, Rochester Gas & Electric Corp., 89 East Ave., Rochester, NY 14650 [716/546-2700 ext. 2220].

*Virginia (est. 1966)*

President, JANE W. WESTENBERGER, Virginia Commonwealth University Ref. Dept., Cabell Library, 901 Park Ave., Richmond, VA 23221 [804/257-1101]; president-elect, FAYE D. WILLIAMS, Tompkins-McCaw Library, Collection Mgmt., Virginia Commonwealth University, Box 667, MCV Station, Richmond, VA 23298 [804/786-0622]; secretary, ARDIE KELLEY, Mariners Museum Library, Newport News, VA 23606 [804/595-0368]; treasurer, VICKY BLEICK, Foreign Mission Board of the Southern Baptist Convention, #806 Monument Ave., Richmond, VA 23230 [804/353-0151]; bulletin editors, SUSAN MILES & CONNIE THOMPSON, Federal Reserve Bank of Richmond, P.O. Box 27622, Richmond, VA 23261 [804/643-1250].

*Washington, D.C. (est. 1940)*

President, CATHERINE A. JONES, Library of Congress-CRS, Congressional Reference Div., Washington, DC [201/287-5741]; president-elect, JOAN GERVINO, American Bankers Association Library, 1120 Connecticut Ave., N.W., Washington, DC 20036 [202/467-4180]; secretary, GAIL MANISCALCO, Price Waterhouse & Company, 1801 K St., N.W., Washington, DC 20006 [202/296-0800]; treasurer, ELIZABETH A. STALLINGS, U.S. Department of Housing & Urban Development Library, Rm. 8141, 451 7th St., S.W., Washington, DC 20410 [202/755-6370]; bulletin editor, GERALD A. SCHWINN, Hagler, Bailly & Co., 2020 K. St. N.W., Suite 350, Washington, DC 20006 [202/463-7568].

**Biological Sciences Group.** Chairman, JACQUELYNNE SCHULMAN, Pergamon Int'l, 1340 Old Chain Bridge Rd., McLean, VA 22101 [202/422-0900].

**Geography & Map Group.** Chairman, JAMES A. FLATNESS, Library of Congress, James Madison Bldg., Geography & Map Div., Washington, DC 20540 [202/287-6277].

**Information Technology Group.** Chairman, NANCY D. WRIGHT, Herner & Co., 1700 N. Moore St., Arlington, VA 22209 [703/558-8237].

**Military Librarians Group.** Chairman, ABBOTT MARTIN, Hq. DA (DAEN-ASZ-S), Washington, DC 20314 [202/272-0664].

**Picture Group.** Chairman, ARLENE FARBER SIRKIN, U.S. Army-The Pentagon, Audiovisual Center-5A470, Washington, DC 20310 [203/697-3350].

**Social Sciences Group.** Chairman, ELIZABETH D. GOLDBERT, 207 Oxford St., Chevy Chase, MD 20015 [301/652-8185].

*Western Michigan (est. 1980)*

President, CLIFFORD L. TIERNEY, JR., Whirlpool Corp., R & E, Technical Information Center, Monte Rd., Benton Harbor, MI 49022 [616/926-5323]; president-elect, LINDA M. WAGENVELD, Herman Miller, Inc., Market Resource Center, Zeeland, MI 49464 [616/772-5156]; secretary, MICHAEL J. BUCKNER, Western Michigan University, Waldo Library, Kalamazoo, MI 49008 [616/383-4952]; treasurer, PAULINE A. SONDAG, Michigan State University, Agricultural Economics, 29 Aghall, East Lansing, MI 48824 [517/355-6650]; bulletin editor, CAROLYN HAMMARSKJOLD, Michigan State University, Morofsky Memorial Library, Kellogg Biological Sta., 37 E. Gull Lake Drive, Hickory Corners, MI 49060 [616/671-5117].

*Wisconsin (est. 1931 as Milwaukee Chapter)*

President, MARY ANN SCHMIDT, Milwaukee School of Engineering, Walter Schroeder Library, P.O. Box 644, Milwaukee, WI 53201 [414/277-7182]; president-elect, JEANNE ROLLIN LEGAULT, Whyte Hirschboeck S.C., 2100 Marine Plaza, Milwaukee, WI 53202 [414/271-8210]; secretary, DEE BIRSCHEL, International Foundation of Employee Benefit Plans, 18700 W. Bluemound Rd., Brookfield, WI 53005 [414/786-6700]; treasurer, RUTH A. FALATYK, Miller Brewing Co., 3939 W. Highland Blvd., Milwaukee, WI 53201 [414/931-3640]; bulletin editor, JULIA MILLER, International Foundation of Employee Benefit Plans, 18700 West Bluemound Rd., Brookfield, WI 53005 [414/786-6700].

# DIVISIONS

*Advertising & Marketing (est. 1942)*

Chairman, SANDRA A. SUTLIFF, Doyle Dane Bernbach, Inc., 437 Madison Ave., New York, NY 10022 [212/826-2000]; chairman-elect, MARSHA APPEL, American Association of Advertising Agencies, 666 Third Ave., New York, NY 10017 [212/682-2500]; secretary, SUE STEPECK, Campbell-Ewald Co., 30400 Van Dyke Ave., Warren, MI 48093 [313/574-3400]; treasurer, LESLIE SLOCUM, Television Information Office, 75 Fifth Ave., New York, NY 10022 [212/759-6800]; bulletin editor, MARSHA COHEN, Ally & Gargano, 360 West 31st St., New York, NY 10001 [212/688-5300].

*Aerospace (est. 1963 as Aerospace Section; Division status 1965)*

Chairman, STANLEY A. ELMAN, Lockheed-California Co., 2555 N. Hollywood Way, Burbank, CA 91520 [213/847-5645]; chairman-elect, SHEILA C. MAXWELL, Spar Aerospace Ltd., 1700 Ormont Dr., Toronto, Ont., Canada M9L 2W7 [416/745-9680 ext. 408]; secretary, NANCY FREDRICK, General Dynamics, Pomona Division Library 4-20, P.O. Box 2507, Pomona, CA 91769 [714/629-5111, ext. 4151]; treasurer, LYDIA O. JOHNSTONE, Williams Research Corp., P.O. Box 200, Walled Lake, MI 48088 [313/624-5200 ext. 1275]; bulletin editor, BARBARA MAGNUSON, California State University/Northridge, 18110 Nordhoff Blvd., Northridge, CA 91330 [213/885-2256] also see *Sci-Tech News*.

*Biological Sciences (est. 1935)*

Chairman, SARA I. HILL, OU-Tulsa Medical College Library, 2808 S. Sheridan, Tulsa, OK 74129 [918/838-3464]; chairman-elect, NOT REPORTED; secretary/treasurer, DORIS BOLEF, Library Director, Rush-Presbyterian-St. Luke's Medical Center, 600 S. Paulina St., Chicago, IL 60612 [312/942-5950]; bulletin editor, KAREN HORST, Library Director, St. Luke's Hospital Medical Library, 44th & Wornall, Kansas City, MO 64111 [816/932-2333].

*Business and Finance (Business Group est. 1934; Financial Group est. 1925; merged 1958)*

Chairman, MARGARET M. LINK, Dartmouth College-Felberg Library, Murdough Center, Hanover, N.H. 03755 [603/646-2191]; chairman-elect, HAROLD W. MILLER, Touche Ross Co., 1633 Broadway, New York, N.Y. 10019 [212/489-1600 ext. 2419]; secretary, ELIZABETH S. KNAUFF, U.S. Dept. of the Treasury, Information Services Div., 15th & Pennsylvania Ave., N.W., Washington, D.C. 20220 [202/566-2069]; treasurer, JANET S. REED, Continental Illinois National Bank, 231 S. La Salle St., Chicago, Il 60693 [312/923-6931]; bulletin editor, CATHERINE R. REILLY, Chase Manhattan Bank, One Chase Manhattan Plaza, New York, N.Y. 10081 [552-6869].

552-0014

*Chemistry (est. 1933 as Chemistry Section; Division status 1966)*

Chairman, BARBARA J. PETERSON, 3M Information Services, 201-2S-00 3M Center, St. Paul, MN 55144 [612/736-1943]; chairman-elect, GARY WIGGINS, Chemistry Library, Indiana University Chemistry Bldg., Rm. 1, Bloomington, IN 47401 [812/337-9452]; secretary, MARGARET G. RYKEN, Swain Library of Chemistry and Chemical Engineering, Stanford University Libraries, Stanford, CA 94305 [415/497-9237]; treasurer, MILDRED B. KELLER, Technical Information Services, Duracell International, Inc., Laboratory for Physical Sciences, Third Ave., Burlington, MA 01803 [617/272-4100]; bulletin editor, KRISTIN K. OBERTS, Technical Library/3M, 201-2S-00 3M Center, St. Paul, MN 55144 [612/733-0057].

*Education (est. 1974)*

Chairman, JOAN S. SEGAL, Bibliographical Center for Research, 245 Columbine St. #212, Denver, CO 80206 [303/388-9261]; chairman-elect, SUSIE SHACKLETON, E. Central Network, Sangamon State University, Illinois Vocational Curriculum Center, E. 22nd St., Springfield, IL 62708 [217/786-6375]; secretary/treasurer, JOYCE ANN JAILLITE, Northeast Missouri State University, Pickler

*Education (continued)*

Memorial Library, Kirksville, MO 63501 [816/665-6121 ext 2749]; bulletin editor, SUZANNE WISE, Appalachian State University, Belk Library, Boone, NC 28608 [704/262-2186 ext 223].

*Engineering (est. 1941 as Engineering-Aeronautics Section)*

Chairman, JOHN R. MOORE, Chicago Public Library, Bus/Sci/Tech Division, 425 North Michigan Ave., Chicago, IL 60611 [312/269-3097]; chairman-elect, PHILIP H. KITCHENS, U.S. Army Missile Command Library, Redstone Arsenal, Huntsville, AL 35803 [205/876-2040]; secretary/treasurer, BARBARA GLICKSBERG, University of Washington, Pacific N.W. Bibliographic Center, Seattle, WA 98195 [206/543-1878]; bulletin editor, RICHARD GRIFFIN, Director of Library Services, Fayetteville State University, Fayetteville, NC 28301 [919/486-1232].

*Environmental Information (est. 1976)*

Chairman, NANCY W. HUANG, Office of Sea Grant, Dept. of Commerce, NOAA, 6010 Executive Blvd., Rockville MD 20854 [301/443-8290]; chairman-elect, W. DAVENPORT ROBERTSON, National Institute of Environmental Health Sciences, Library, P.O. Box 12233, Research Triangle Park, NC 27709 [919/541-3426]; secretary, NANCY R. SIMPSON, Illinois Environmental Protection Agency, Library, 2200 Churchill Rd., Springfield, IL 62706 [217/782-9691]; treasurer, KATHRYN L. FLOWERS, Envirodyne Engineers, Inc., 12161 Lackland Rd., St. Louis, MO 63141 [314/434-6960]; bulletin editor, REGINA BROWN, Ohio State University, Orton Memorial Library of Geology, 155 S. Oval Drive, Columbus, OH 43210 [614/422-2428].

*Food and Nutrition (est. 1972 as Food Librarians)*

Chairman, RUE E. OLSON, Illinois Agricultural Assoc., IAA & Affiliated Companies Library, 1701 Towanda Ave., Bloomington, IL 61701 [309/557-2550]; chairman-elect, JAMES B. TCHOBANOFF, The Pillsbury Co., R & D Laboratories, 311 2nd St., S.E., Minneapolis, MN 55414 [612/330-4356]; secretary, AILEEN MUNDSTOCK, Universal Foods Corporation, Research Library, 6143 N. 60th St., Milwaukee, WI 53218 [414/271-6755]; treasurer, SUZANNE STUEHRENBERG, Pillsbury Company, R & D Technical Information Center, 311 2nd St., S.E., Minneapolis, MN 55414 [612/330-5032]; bulletin editor, MARGARET BELL, General Foods, Technical Center Library, 555 South Broadway, Tarrytown, NY 10591 [914/683-6785].

*Geography & Map (est. 1941)*

Chairman, MAI TREUDE, University Libraries, University of Minnesota-S76 Wilson Library, Minneapolis, MN 55455, [612/373-2825]; chairman-elect, JAMES O. MINTON, University of Michigan, Map Room-825 Hatcher Library, Ann Arbor, MI 48109 [313/764-0407]; secretary, DAVID K. CARRINGTON, Library of Congress, James Madison Memorial Bldg., Rm. B02 Washington, D.C. 20540 [202/287-8534]; treasurer, NOT REPORTED; bulletin editor, MARY MURPHY, 8102 Birnam Wood Drive, McLean, VA 22102, [703/356-5614]

*Information Technology (est. 1951 as Documentation)*

Chairman, JAMES H. BEMENT, Xerox Corp., J.C. Wilson Center for Technology 105B, Rochester, N.Y. 14644 [716/422-2145]; chairman-elect, NOLAN F. POPE, University of Florida-Libraries, Gainesville, FL 32611 [904/392-0796]; secretary, G. SUE SAVAGE, Savage Information Service, Suite 310, 608 Silver Spur Rd., Rolling Hills Estates, CA 90274 [213/377-5032]; treasurer, RENA SCHONBRUN, U.S. Dept. Agriculture—Library Western Regional Research Lab., Berkeley, CA 94710 [415/486-3351]; bulletin editor, BARBARA MAGNUSON, California State University Library, North Ridge, CA 91330 [213/885-2256] also see *Sci-Tech News*.

**Online Section.** Chairman, DAVE GROSSMAN, SDC Search Service, 2500 Colorado Ave., Mail Code 80-05, Santa Monica, CA 90406 [213/820-4111].

# DIVISIONS

***Insurance & Employee Benefits (est. 1922 as Insurance Division)***

Chairman, LAURA GARRETT, State Farm Insurance Co., One State Farm Plaza, Library E-5, Bloomington, IL 61701 [309/662-6025]; chairman-elect, LAURA DIRKS, Alexander & Alexander, Inc., 400 S. County Rd., Suite 500, Minneapolis, MN 55426 [612/546-1628]; secretary, PAULA GRANDE, Coopers & Lybrand, 1251 Avenue of the Americas, New York, NY 10020 [212/536-2000 ext. 3229]; treasurer, CAROLYN O'HARA, American International Group, 70 Pine St., New York, NY 10005 [212/770-8241]; bulletin editor, LAURA DIRKS, Alexander & Alexander, Inc., 400 S. County Rd., Suite 500, Minneapolis, MN 55426 [612/546-1628].

***Library Management (est. 1976)***

Chairman, FRANK H. SPAULDING, Bell Telephone Laboratories, Room 3B-202, Holmdel, NJ 07733 [201/949-3456]; chairman-elect, JOE ANN CLIFTON, Litton Industries, 5500 Canoga Ave., Woodland Hills, CA 91364 [213/887-2678]; secretary, JULIA M. VANCE, 2665 Meadow Court, Chamblee, GA 30341, [404/458-0861]; treasurer, KATHLEEN T. PABST, Mechanics Institute, 57 Post Rd., San Francisco, CA 94104, [415/421-1750]; bulletin editor, GRETCHEN STEPHENS, Purdue University, Veterinary Medical Library, West Lafayette, IN 47907 [317/749-2249].

**Library Consultant Section.** Chairman, JUDITH J. FIELD, Flint Public Library, General Reference Dept., 1026 Kearsley St., Flint, MI 48502 [313/232-7111, ext 48].

***Metals/Materials (est. 1949 as Metals Section; Division status 1953)***

Chairman, NANCY J. SUVAK, United States Steel Corp., 600 Grant St., Rm. 1818, Pittsburgh, PA 15230 [412/433-3459]; chairman-elect, BARBARA M. BANEK, Inland Steel Co., 3001 E. Columbus Drive, East Chicago, IL 46312 [219/392-5824]; secretary, PAQUERETTE LE CLERC, Alcan Aluminum Ltd., P.O. Box 250, Arvida, Que., Canada G7S 4K8 [418/548-1121 ext. 2844]; treasurer, JANICE E. WEST, Louisiana Land & Exploration Co., 3900 S. Wadsworth #660, Lakewood, CO 80235 [303/988-8660]; bulletin editor, LINDA SPENCE, Westinghouse Electric Corp., 875 Greentree Rd., Pittsburgh, PA 15220 [412/918-2372].

***Military Librarians (est. 1953)***

Chairman, MARTHA A. BLAKE, U.S. Army Construction Engineering Research Lab., P.O. Box 4005, Champaign, IL 61820 [217/352-6511]; chairman-elect, PETER IMHOF, Commanding Officer Naval Research Lab., Code 2620, Washington, DC 20375 [202/767-2357]; secretary/treasurer, JUNE R. GABLE, Strategic Systems Project Office, Dept. of the Navy, Washington, DC 20376 [202/697-2852]; bulletin editor, FRANCES QUINN, HQ AFSC/MPSL, Director of Command Libraries, Andrews AFB, Washington, DC 20334 [301/981-2598].

***Museums, Arts & Humanities (est. 1929 as Museum Group)***

Chairman, THOMAS V. HULL, American Legion National Headquarters Library, 700 N. Pennsylvania St., Indianapolis, IN 46206 [317/635-8411]; chairman-elect, WILLIAM E. MCCLEARY, Louisiana State University Library, 8515 Youree Drive, Shreveport, LA 71105 [318/865-7121]; secretary/treasurer, WILLIAM B. NEFF, Smithsonian Institution Library, Washington, DC 20560 [202/357-1994]; bulletin editor, SHARON SWEETING, Smithsonian Institution Library, Washington, DC 20560 [202/357-2067].

***Natural Resources (est. 1968)***

Chairman, EVE DOWIE, Canada Centre for Inland Waters Library, 867 Lakeshore Rd., Burlington, Ont., Canada L7S 1X8 [416/637-4530]; chairman-elect, BONNIE M. HILDITCH, Ref. Dept. Zimmerman Library, University of New Mexico, Albuquerque, NM 87131 [505/277-5762]; secretary, MARY LOU STURSA, Governer's Energy Office, 301 Bryant Bldg., Tallahassee, FL 32301 [904/488-6143]; treasurer, JANE V. MCFALL, Pennsylvania State University, Life Sciences Library, Univer-

*Natural Resources (continued)*

sity Park, PA 16802 [814/865-7056]; bulletin editor, BARBARA J. ARNOLD, University of Wisconsin Sea Grant Advisory Service, 1815 University Ave., Madison, WI 53706 [608/262-2814].

*Newspaper (est. 1924)*

Chairman, SHIRLEY E. MOONEY, Pacific Press Ltd., 2250 Granville St., Vancouver, B.C. V6H 3G2 [604/732-2519]; chairman-elect, HARISH TRIVEDI, Journal-Herald Library, 37 S. Ludlow St., Dayton, OH 45401 [513/225-2201]; secretary/treasurer, KATHLEEN TRIMBLE, Toledo Blade Library, 541 Superior St., Toledo, OH 43660 [419/245-6188]; bulletin editor, VIRGINIA DAVIS, Chicago Sun-Times Library, 401 N. Wabash, Chicago, IL 60611 [312/321-2592].

*Nuclear Science (est. 1963 as Nuclear Science Section; Division status 1966)*

Chairman, MARGARET H. CONYNGHAM, U.S. Nuclear Regulatory Commission, Library, Washington, DC 20555 [301/492-7748]; chairman-elect, SANDRA G. LANE, Brookhaven National Lab., P.O. Box 5500, Livermore, CA 94550 [415/422-5841]; treasurer, DOTTIE SHERMAN, American Nuclear Insurers, The Exchange Bldg., Suite 245, 270 Farmington Ave., Farmington, CT 06032, [203/677-7305]; bulletin editor, see *Sci-Tech News*.

*Petroleum & Energy Resources (est. 1933 as Petroleum Section; Division status 1966 as Petroleum Division)*

Chairman, STANLEY E. BREWER, Gulf Refining & Marketing Co., P.O. Box 2100, Houston, TX 77001 [713/754-1128]; chairman-elect, SUSAN K. HUGHES, Mobil Producing Texas & New Mexico, Inc., 9 Greenway Plaza, Suite 2700, Houston, TX 77046 [713/871-5621]; secretary, ANN NEILSON, Gulf Canada Ltd., R&D Library, 2489 N. Sheridan Way, Mississauga, Ont., Canada L5K 1A8 [416/822-6770 ext. 120]; treasurer, NANCY MUSGROVE, Ontario Ministry of Energy, 56 Wellesley St. W., Toronto, Ont., Canada M5S 2S3 [416/965-9175]; bulletin editor, MARY D. WOOD, Standard Oil Co., 4440 Warrensville Center Rd., Cleveland, OH 44128 [216/575-6327].

*Pharmaceutical (est. 1947 as Pharmaceutical Section; Division status 1966)*

Chairman, ILDIKO TROMBITAS, Burroughs Wellcome Co., 3030 Cornwallis Rd., Research Triangle Park, NC 27709 [919/541-9090 ext. 4305]; chairman-elect, BETTE DILLEHAY, A.H. Robins Company, 1407 Cummings Drive, Richmond, VA 23220 [804/257-2858]; secretary, JEAN HUDSON, Schering-Plough Pharmaceutical Research Division, 60 Orange St., Bloomfield, NJ 07003 [201/743-6000 ext. 783]; treasurer, ROLLY SIMPSON, Burroughs Wellcome Co., 3030 Cornwallis Rd., Research Triangle Park, NC 27709 [919/541-9090 ext. 4377]; bulletin editor, MICHAEL HOMAN, The Upjohn Company, Corporate Technical Library, Kalamazoo, MI 49001 [616/385-7768].

*Physics-Astronomy-Mathematics (est. 1972)*

Chairman, SUZANNE FEDUNOK, Columbia University, 303 Mathematics Bldg., New York, NY 10027 [212/280-4712]; chairman-elect, DOROTHY MCGARRY, UCLA, Physical Sciences and Technology Libraries, Los Angeles, CA 90024 [213/825-3438]; secretary, BRENDA CORBIN, U.S. Naval Observatory Library, 34th & Massachusetts Ave., N.W., Washington, DC 20390 [202/254-4525]; treasurer, ZANE STERNS, Towers, Perrin, Forster & Crosby, P.O. Box 281, Toronto Dominion Center, Toronto, Ont., Canada [416/362-2333]; bulletin editor, JAMES LEONARD, IBM Research Center Library, P.O. Box 218, Yorktown Heights, NY 10598 [914/945-2830].

# DIVISIONS

*Picture (est. 1952)*

Chairman, LARRY A. VISKOCHIL, Chicago Historical Society, Clark St. at North Ave., Chicago, IL 60614 [312/642-4600]; chairman-elect, LAURA LANE, American Heritage Publishing Co., 10 Rockefeller Plaza, New York, NY 10020 [212/399-8900]; secretary, TOM PRENDERGAST, United Nations Photo Library, UN Headquarters, Rm. 994, New York, NY 10017 [212/754-6927]; treasurer, JONATHAN HELLER, Still Picture Branch, National Archives, 8th and Pennsylvania Ave., N.W., Washington, DC 20408 [202/523-3054]; bulletin editor, WILLIAM LEARY, National Archives, 8th and Pennsylvania Ave., N.W., Washington, DC 20408 [202/523-3082].

*Public Utilities (est. 1962 as Public Utilities Section; Division status 1969)*

Chairman, MARIE S. RICHARDSON, United Illuminating Co., 80 Temple St., New Haven, CT 06506 [203/787-7690]; chairman-elect, VIRGINIA H. PERKINS, Wisconsin Electric Power Co., 231 West Michigan Ave., Rm. 433, Milwaukee, WI 53201 [414/227-2580]; secretary, MATTHEW CULLEN, Bonneville Power Authority, P.O. Box 3621, Portland, OR 97208 [503/234-3361 ext. 4445]; treasurer, KAY L. AMES, Michigan Consolidated Gas Co., One Woodward Ave., Detroit, MI 48226 [313/965-2430]; bulletin editor, KATHERINE N. PFEIFFER, Gulf States Utilities, Nuclear Licensing Library, P.O. Box 2951, Beaumont, TX 77704 [713/838-3843 ext. 411].

*Publishing (est. 1947)*

Chairman, CORNELIA A. KELLEY, University of Virginia, Alderman Library-Acquisitions, Charlottesville, VA 22901 [804/924-3024]; chairman-elect, WILLIAM C. PETRU, Hewlett-Packard Co., Corporate Library, 1501 Page Mill Rd., Palo Alto, CA 94304 [415/857-3091]; secretary, NOT REPORTED; treasurer, LAURA N. GASAWAY, University of Oklahoma-Law Library, 300 Timberdell, Norman, OK 73019 [405/325-6909]; bulletin editor, JO MANNING, Readers Digest—General Books, 750 Third Ave., 3rd Floor, New York, NY 10017 [212/972-8452].

*Science-Technology (est. 1924)*

Chairman, CYNTHIA STEINKE, University of Illinois at Chicago Circle, Science Library, P.O. Box 7565, Chicago, IL 60680 [312/996-5395]; chairman-elect, JAMES LEONARD, Thomas J. Watson Research Center, Research Division-IBM, P.O. Box 218, Yorktown Heights, NY 10598 [914/945-2830]; secretary, LAURA J. RAINEY, Rockwell International Corp., Technical Information Center, BA 29 Rocketdyne Division, 6633 Canoga Ave., Canoga Park, CA 91304 [213/884-2575]; treasurer, JEAN R. MILLER, Beckman Instruments, Inc., Research Library, 2500 Harbor Blvd., Fullerton, CA 92634 [213/691-0841]; bulletin editor, BARBARA MAGNUSON, California State University—Library, North Ridge, CA 01330 [213/885-2256].

*Social Science (est. 1923 as Civics Group)*

Chairman, ANN BERG, Tucson Public Library, Governmental Reference Library, P.O. Box 27210, Tucson, AZ 85726 [602/791-4235]; chairman-elect, MARY F. POWER, National Gerontology Resource Center, 1909 "K" St., N.W., Washington, DC 20049 [202/872-4984]; secretary/treasurer, M. KAY MOWERY, California Dept. of Food & Agriculture, 1220 "N" St. Rm. A-151, Sacramento, CA 95814 [916/322-5130]; bulletin editor, SHARYN LADNER, Behavioral Science Research Corp., 1000 Ponce de Leon Blvd., Coral Gables, FL 33134 [305/448-7622].

**International Affairs Section.** Chairman, RITA C. WARPEHA, Action Library, M-407, 806 Connecticut Ave., N.W., Washington, DC 20525 [202/254-3307].

**Legislative Reference Section.** Chairman, DONNA W. SCHEEDER, Congressional Reference Div., Library of Congress, 1st & Independence Ave., S.E., Washington, DC 20540 [202/425-5741].

**Social Welfare Section.** Chairman, EVANGELINE MISTARIS, Northeastern Illinois University Library, Bryn Mawr at St. Louis Ave., Chicago, IL 60625 [312/583-4050 ext 479].

**Urban Affairs Section.** Chairman, ELIZABETH STALLINGS, Department of Housing & Urban Development, Library Div., 451 7th St., S.W., Washington, DC 20410 [202/755-6370].

*Telecommunications (est. 1977 as Telecommunications/Communications)*

Chairman, GRANT BIRKS, Bell Northern Research, Technical Information Center, P.O. Box 311—Stn. C, Ottawa, Ont., Canada K1Y 4H7 [613/226-5400]; chairman-elect, ROSA LIU, Intel Sat, 490 L'Enfant Place S.W., Washington, DC 20024 [202/488-2300]; secretary/treasurer, JOAN FAGE, Maritime Tel & Tel Co., Ltd., Information Resource Center, P.O. Box 880, Halifax, NS, Canada B3J 2W3 [902/421-4570]; bulletin editor, RHONA GLAZER, Bell Canada, Information Resource Center, 6th Fl., 393 University Ave., Toronto, Ont., Canada M5G 1W9 [416/599-2387].

*Transportation (est. 1943)*

Chairman, JANE M. JANIAK, Port Authority of New York & New Jersey, Library—54 N., One World Trade Center, New York, NY 10048 [212/466-4060]; chairman-elect, MARTY LOVELOCK, Canadian Transport Commission—Library, Ottawa, Ont. K1A 0N9, Canada [819/997-7160]; secretary/treasurer, LAWRENCE E. LEONARD, U.S. Dept. of Transportation, Technical Processing Branch, 400 Seventh St., S.W., Washington, DC 20590 [202/426-2714]; bulletin editor, ANN POOLE, University of Toronto/York University, Joint Program in Transportation, 42 St. George St., Toronto, Ont. M5S 1A1 Canada [416/978-6424].

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C. W. Post Center
Long Island University
DR. JOSEPH N. WHITTEN

St. John's University
DR. A. M. ABDUL HUQ

Sam Houston State University
FRANK HOFFMAN

Simmons College
M. "JIMS" MURPHY
PAT OYLER

SUNY/Albany
DR. IRVING KLEMPNER

SUNY/Buffalo
DR. A. NEIL YERKEY

University of Arizona
ROBERT BERK

University of California Los Angeles
KENNETH PLATE

University of Denver
Dissolved

University of Hawaii
Inactive

University of Illinois Urbana/Champaign
PROF. LINDA C. SMITH

University of Iowa
PROF. FREDERICK WEZEMAN

University of Michigan
RAYMOND E. DURRANCE

University of Missouri Columbia
THOMAS R. KOCHTANEK

University of Oklahoma
DR. BERNICE C. MCKIBBEN

University of Pittsburgh
EVALYN CLOUGH

University of South Carolina
Dissolved

University of South Florida
JOHN M. KNEGO

University of Texas—Austin
PROF. EUGENE B. JACKSON

University of Wisconsin Madison
RICHARD D. WALKER

Villanova University
E. ELIZABETH WALSH

# DIVISION BULLETINS

News of Aerospace Division, Information Technology Division, Nuclear Science Division, Pharmaceutical Division, Science-Technology Division, and Transportation Division is published in *Sci-Tech News*.

| DIVISION | TITLE | EDITOR | COVERAGE | ISSUES PER YEAR | PRICE | ORDER FROM & CHECKS PAYABLE TO |
|---|---|---|---|---|---|---|
| ADVERTISING & MARKETING | *What's New in Advertising and Marketing* | Nadine Bauman<br>J. Walter Thompson Co.<br>Information Center<br>420 Lexington Ave.<br>New York, NY 10017 | Current materials in advertising, marketing, media, consumer surveys. Emphasis on free or inexpensive books, services, and periodicals. | 10 | SLA members: $15.00 domestic; $20.00 for'n. payable in U.S. dollars | Adv. & Mktg. Div. SLA<br>Ruth Fromkes<br>Foote, Cone & Belding<br>200 Park Ave.<br>New York, NY 10017 |
| | *Advertising and Marketing Division Bulletin* | Marsha Cohen<br>Ally & Gargano<br>360 W. 31 St.<br>New York, NY 10001 | Division news; member activities and changes; membership directory; annual report; Conf. news; special features. | 4 | Free to Division members | Subscriptions are not accepted. |
| BIOLOGICAL SCIENCES | *Biological Sciences Division Newsletter* | Karen Horst<br>St. Luke's Hosp.<br>Med. Library<br>44 & Wornall, Kansas City, MO 64111 | Division news and related articles. | 3 | Free to Division members | Subscriptions are not accepted. |
| BUSINESS AND FINANCE | *Business and Finance Division Newsletter* | Catherine R. Reilly<br>Chase Manhattan Bank, N.A.<br>The Information Center<br>1 Chase Manhattan Plaza<br>New York, NY 10081 | Division news; brief notes of members' activities; bibliographies; business library profiles; information exchange. | 3 | Free to Division members; nonmembers: $12.00 | *see* Editor |
| CHEMISTRY | *Chemistry Division Newsletter* | Kristin K. Oberts<br>Technical Library/3M<br>201-2S 3M Center<br>St. Paul, MN 55144 | Division news; articles on progress and problems of information transfer in chemistry. | 3 | Free to Division members; nonmembers: $4.00 | |
| EDUCATION | *Education Libraries* | Susan Baughman<br>Monroe C. Gutman Library<br>Graduate School of Education<br>Harvard University<br>6 Appian Way<br>Cambridge, MA 02138 | Professional articles; book reviews; bibliographies; and editorial news of interest to librarians. | 3 | $5.00 for individual subscriptions; $10.00 institutional subscriptions; $15.00 for'n | "SLA Education Division" *see* Editors |
| | *Education Division Bulletin* | Suzanne Wise<br>Appalachian State Univ.<br>Belk Library<br>Boone, NC 20608 | Division news; member activities and changes; membership directory annual reports; conference news. | 3 | Free to Division members. | Subscriptions are not accepted. |
| ENGINEERING | *The Reporter* | Richard Griffin<br>Fayetteville State Univ. Library<br>Fayetteville, NC 28301 | | 3 | | |
| ENVIRONMENTAL INFORMATION PROVISIONAL | *Environmental Information* | Regina Brown<br>Orton Memorial Library of Geology<br>Ohio State University<br>155 S. Oval Dr.<br>Columbus, Ohio 43210 | Natl./int'l. coverage of legislation, events, info. resources, and items of interest to environmental librarians. | 4 | $5.00 | "SLA, Environmental Information Prov. Division" *see* Editor |

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| FOOD AND NUTRITION | *Food for Thought* | Margaret Bell<br>General Foods Corp.<br>555 S. Broadway<br>Tarrytown, N.Y. 10591 | Division news; member activities and changes; special features. | 6 | Free to Division members; nonmembers: $5.00 | "Treasurer, Food & Nutrition Division, SLA"<br>*see* Editor |
| | *Food Publications Round-up* | Larry Walton<br>P.O. Box 8743<br>Jefferson Memorial Sta.<br>14 S. 4th St.<br>St. Louis, MO 63102 | Bibliographic guide to new publications in English on food or nutrition. | Irregular | Division members: $25.00/yr.; nonmembers: $35.00/yr., add $5.00 for for'n mailing. | Same as above. |
| GEOGRAPHY AND MAP | *Geography and Map Division Bulletin* | Mary Murphy<br>8102 Birnam Wood Dr.<br>McLean, VA 22102 | Professional articles; Division news; book reviews; bibliographies; project reports; membership lists; cartographic or geographic bibliographical news. | 4 | Free to Division members; nonmembers: $17.00 U.S., Canada, Mexico; $20.00 other | Kathleen I. Hickey<br>9927 Edward Ave.<br>Bethesda, MD 20014 |
| INSURANCE & EMPLOYEE BENEFITS | *Insurance & Employee Benefits Literature* | Elisabeth P. Brown<br>American College<br>270 Bryn Mawr Ave.<br>Bryn Mawr, PA 19010 | Annotated listing of current literature of all types in the field of insurance. | 6 | $10.00/yr.<br>$15.00 for'n | Carol Gottliebsen<br>INA Corp.<br>1600 Arch St.<br>Philadelphia, PA 19101 |
| | *Insurance & Employee Benefits Division Bulletin* | Laura Dirks<br>Alexander & Alexander, Inc.<br>Suite 500, Shelard Plaza S.<br>Minneapolis, MN 55426 | Division news; annual reports; Conference programs; membership list and membership changes | 3 | Free to Division members | Subscriptions are not accepted. |
| LIBRARY MANAGEMENT | *Library Management Bulletin* | Gretchen Stephens<br>Rm. 108, Lynn Hall<br>Purdue University<br>West Lafayette, IN 47907 | All aspects of library management | 4 | $25.00/yr.<br>nonmembers | Mary Ann Roman<br>Law Library<br>Barnes, Hickam, Pantzer, Boyd<br>1313 Merchants Bank Bldg.<br>Indianapolis, IN 46204 |
| METALS/MATERIALS | *Metals/Materials Division News* | Linda Spence<br>Westinghouse Electric Corp.<br>114 Wallace Circle<br>Aliquippa, PA 15001 | Division news; annual reports; membership directory; member news. | 3 | Free to Division members | Subscriptions are not accepted. |
| MILITARY LIBRARIANS | *Military Librarians Division Bulletin* | Frances Quinn<br>HQ AFSC/MPSL<br>Command Libraries<br>Andrews AFB, DC 20334 | News notes; official notices. | 3 | Free to Division members | Subscriptions are not accepted. |
| MUSEUMS, ARTS & HUMANITIES | *Museums, Arts & Humanities Division Bulletin* | Sharon Sweeting<br>Smithsonian Inst. Libraries<br>Washington, DC 20560 | Division news; editorials; articles on libraries; project reports, book reviews. | 2 | Free to Division members; nonmembers: $3.00 | Museums, Arts & Humanities Division, SLA<br>*see* Editor |
| NATURAL RESOURCES | *Natural Resources Division Newsletter* | Barbara J. Arnold<br>U W Sea Grant<br>Advisory Services<br>1815 University Ave.<br>Madison, WI 53706 | Division news; conf. news; editorials; special features; news from related organizations and activities. | 4 | Free to Division members; nonmembers: *contact editor* | *see* Editor |
| NEWSPAPER | *News Library News* | Suzanna Shuster<br>Patti Brown<br>Janet Lundblad<br>Joan Stern<br>*LA Times*<br>Times Mirror Sq.<br>Los Angeles, CA 90053 | Articles on news libraries; new developments; offers of material; member news. | 4 | Free to Division members<br>Two year subscriptions accepted: $20.00 | SLA, NWS Div.<br>Janet Lundblad<br>*LA Times*<br>Editorial Library<br>Times Mirror Sq.<br>Los Angeles, CA 90053 |

# DIVISION BULLETINS

| DIVISION | TITLE | EDITOR | COVERAGE | ISSUES PER YEAR | PRICE | ORDER FROM & CHECKS PAYABLE TO |
|---|---|---|---|---|---|---|
| PETROLEUM & ENERGY RESOURCES | *Petroleum & Energy Resources Division Bulletin* | Mary D. Wood<br>Standard Oil Co.<br>4440 Warrensville Center Rd.<br>Cleveland, OH 44128 | Member news; Association news. | 4 | | |
| PHYSICS-ASTRONOMY-MATHEMATICS | *Physics-Astronomy Mathematics Bulletin* | James W. Leonard, editor<br>Brenda G. Corbin, coeditor<br>IBM Research Center Library, 16-226<br>P.O. Box 218<br>Yorktown Hgts., NY 10598 | Division news; bibliographies; book reviews; news of interest in the fields of physics, astronomy and math; editorial comment. | 4 | Free to Division members | |
| PICTURE | *Picturescope* | William H. Leary<br>P.O. Box 50119<br>F St. Sta., Tariff Comm. Bldg.<br>Washington, DC 20004 | Division news, illustrated articles on print, photo, and slide collections; their organization, classification, and preservation; columns on accessions, automation, bibliography, books, careers, collections, exhibitions, grants, journals, microforms, preservation, research, and history. | 4 | Free to Division members; nonmember institutions $25, individuals, $15, and students $8 | Treasurer, Picture Division |
| PUBLIC UTILITIES | *Public Utilities Division Newsletter* | Katherine N. Pfeiffer<br>Gulf States Utilities<br>Nuclear Licensing Library<br>P.O. Box 2951<br>Beaumont, TX 77704 | Division news; member activities; membership changes; Conference news; special features. | 4 | Free to Division members | Subscriptions are not accepted. |
| PUBLISHING | *Publishing Division Bulletin* | Jo Manning<br>Reader's Digest<br>General Books Library<br>750 Third Ave.<br>New York, NY 10017 | Division news; articles on publishing house libraries and publishing; bibliographies. | 3 | Free to Division members | Laura N. Gasaway<br>Law Center<br>University of Oklahoma<br>300 Timberdell Rd.<br>Norman, OK 73019 |
| SCIENCE-TECHNOLOGY | *Sci-Tech News* | Barbara Magnuson<br>California State University/ Northridge Library<br>Northridge, CA 91330 | News and annual reports of the sponsoring Divisions; articles; editorials. | 4 | Free to members of sponsoring Divisions; nonmembers; $9.00 U.S., $11.00 for'n. | "Sci-Tech News"<br>Josephine Zoretich<br>P.O. Box 4501<br>Pasadena, CA 91106 |
| SOCIAL SCIENCE | *SLA-SSD Bulletin* | Sharyn Ladner<br>Behavioral Science Research<br>1000 Ponce de Leon Blvd.<br>Coral Gables, FL 33134 | News notes, annual meeting minutes. | 3 | Free to Division members | Subscriptions are not accepted. |
| TELECOMMUNICATIONS | *Telcom* | Rhona Glaser<br>Bell Canada<br>Inf. Resource Center<br>393 University Ave.<br>Toronto, Ont., Canada M5G 1W9 | Division, membership, and telecommunication news. | 3 | Free to Division members | |

# COMMITTEES

All Association Committees are appointed by the President and are responsible to the Board of Directors to which they must submit a written report at least once a year. Each Committee is responsible for:
*1)* Recommending and implementing Association policy;
*2)* Recommending an annual budget for its own work;
*3)* Keeping informed of activities and progress in the field of the Committee's assignments through the literature and attendance at meetings which involve these activities;
*4)* Speaking for the Association on matters which pertain to the Committee's general responsibility and interests on which they should be fully informed.

**Association Bylaws Article X: Committees**

SECTION 1. Standing Committee and Special Committees of the Association and Special Committees of the Board shall be established by the Board. These Committees shall be responsible to the Board which will delegate such powers and functions to them as the Board finds desirable for the conduct of its business and for carrying out the objectives of the Association.

SECTION 2. The President shall appoint the members and designate the chairman of all Committees except the Nominating Committee. Appointments to Standing Committees shall be made to provide continuity of membership. No member may serve on any one Committee in excess of six consecutive years.

SECTION 3. Each Committee shall submit to the Board a written annual report of its activities which shall contain any recommendations considered necessary or advisable. Additional reports may be submitted at the option of a Committee or as requested by the Board or the President.

SECTION 4. Funds for Committee expenses shall be authorized by the Board through an annual allotment or upon submission of an estimated budget.

SECTION 5. Standing Committees and Special Committees may establish subcommittees to assist in their work. Subcommittees may include nonmembers of the Association.

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*Association Office Operations*

The Committee consists of five members from the Board of Directors with the President as chairman. Members, in addition to the President, are the Past President, President-Elect, Treasurer and Secretary. The Committee shall be responsible for Association Office operations review including, but not limited to, personnel functions. It shall also be responsible for a review, at least annually, with the Association's auditors and the Executive Director concerning the financial functions of the Association.

The Committee shall initiate any proposals for changes in salary for the Executive Director. Recommendations on salary and personnel policy shall be submitted to the Board of Directors for action. The Committee shall meet either on call of the chairman or at the request of the Executive Director. The Committee shall be the Trustee of all SLA Employee Benefit Plans. (Association Office contact is the Executive Director.) *Committee definition revised Jan 1977.*

Chairman, GEORGE H. GINADER, 45 South Main St., Cranbury, NJ 08512 [609/655-4073] (1980-83); JAMES B. DODD (1979-82); DOROTHY KASMAN (1979-82); JANET RIGNEY (1981-84); MARY VASILAKIS (1981-82).

*Awards*

Five members, consisting of the two immediate past presidents, each serving as chairman of the Committee in his second year, the President-Elect, and the Chairmen of the Chapter and Division Cabinets. The Committee shall elect and report to the Board of Directors the recipients of the SLA Professional Award, the SLA Hall of Fame Award and the SLA John Cotton Dana Award. (Association Office contact is the Manager, Publications Department.) *Committee definition revised Jan 1975.*

Chairman, JOSEPH M. DAGNESE, Purdue University Libraries, Stewart Center, West Lafayette, IN 47907 [317/749-2574] (1978-

82); JULIE H. BICHTELER, (1981-82); JAMES B. DODD (1979-83); JANE I. DYSART (1981-82); JANET M. RIGNEY (1981-85). [Board Proctor: GEORGE GINADER.]

### *Committee on Committees*

Five members appointed for overlapping terms of two years each of whom at least two shall be present members of the Board of Directors. The Committee shall codify those actions and instructions of the Board pertinent to Association Committees, both specifically and generally. The Committee shall maintain an overview of Committee definitions as they appear in this *Directory*, prepare or revise Committee definitions (which include the statement of composition, purpose, duties, and Association Office contact) as the need occurs, and conduct such other studies and make those recommendations required to promote effective and efficient operation of Association Committees. (Association Office contact is the Executive Director.) *Committee definition revised Jun 1976.*

Chairman, JEAN DEUSS, Federal Reserve Bank of New York, Research Library, Federal Reserve Post Office Sta., New York, NY 10045 [212/791-6732] (1978-82); JACQUELINE J. DESOER (1981-83); JACK S. ELLENBERGER (1980-82); M. ELIZABETH MOORE (1981-83); JAMES B. TCHOBANOFF (1980-82). [Board Proctor: JACK LEISTER.]

### *Bylaws*

Three members appointed for overlapping terms of two years. The purpose of this Committee shall be to make sure that the Association has a body of rules which conform to legal standards. The Committee shall study the Bylaws and propose amendments in accordance with Article XVI of the Bylaws and shall consider and formulate recommendations on proposals made by Association members; the Committee shall review the bylaws of each Division, Chapter, or other Association unit to prevent conflict with rules governing the whole Association. (Association Office contact is the Executive Director.) *Committee definition revised Jan 1963.*

Chairman, M. "JIMS" MURPHY, U.S. Army Materials & Mechanics Research Center, Technical Library, Watertown, MA 02172 [617/923-3460] (1981-83); BRIAN PHILLIPS (1980-82); ROBERT M. BROOKS (1981-83). [Board Proctor: JACK LEISTER.]

### *Conference Program*

1982 DETROIT CONFERENCE PROGRAM

Conference Program Chairman, MARILYN K. JOHNSON, Shell Oil Company, Two Shell Plaza, P.O. Box 587, Houston, TX 77001 [713/241-1017]; Deputy Conference Program Chairman, RICHARD WALLACE; BARBARA K. BECKER; GLADYSANN WELLS [Board Proctor: GEORGE GINADER.]

1983 NEW ORLEANS CONFERENCE PROGRAM

Chairman, EDWINA "DIDI" PANCAKE, University of Virginia, Science/Technology Information Center, Clark Hall, Charlottesville, VA 22901 [804/924-7209]; Deputy Conference Program Chairman, ELLEN STEININGER; CAROL A. DRUM; MARY H. HENSHAW; CELINE WALKER. [Board Proctor: JANET RIGNEY.]

### *Consultation Service*

Five members, appointed for overlapping terms of two years each. The Committee shall have the responsibility for developing and coordinating consultation services at the Chapter/Division level. It shall establish and maintain communications with, continually survey the activities of, and provide guidance and direction to the Chapter/Division Consultation Service Committees. The Committee shall prepare guidelines, manuals and other materials designed to encourage and insure the provision of consistently professional Chapter/Division consultation services. (Association Office contact is the Executive Director.) *Committee definition revised Jan 1981.*

Chairman, ROBERT B. LANE, U.S. Air Force, Air University Library, Maxwell AFB, AL 36112 [205/293-2606] (1980-82); SUSAN BALL (1981-83); MYRA NORTON (1980-82); NANCY PIEROBON (1981-83); MERYL SWANIGAN (1981-83). [Board Proctor: M. ELIZABETH MOORE.]

*Copyright Law Implementation*

Three members appointed for overlapping terms of three years each, the Chairman of which shall be the Representative to the appropriate CNLIA copyright committee. The Committee shall: 1) monitor developments stemming from copyright legislation; 2) represent the Association on matters of copyright law implementation; and 3) keep Association members advised on new developments in the field of copyright. (Association Office contact is the Executive Director.) *Committee definition adopted Feb 1979.*

Chairman, EFREN W. GONZALEZ, Bristol-Myers Products, 1350 Librety Ave., Hillside, NJ 07207 [201/926-6733] (1978-83); HAROLD MILLER (1978-82); MICHAEL UBALDINI (1980-83). [Board Proctor: CHARLES BAUER.]

*Education*

Seven members appointed for overlapping terms of three years each; one member shall be the Association's Representative to Continuing Library Education Network and Exchange (CLENE).

The Committee shall: 1) analyze the continuing education needs of the Association's members and the educational activities of the Association's units in order that the findings from these analyses may be incorporated into the Association's continuing education program; 2) advise and assist the Association's Manager of Professional Development in planning and evaluating Association-sponsored seminars and institutes for the continuing education of those already in the field; 3) review and endorse the Association's continuing education program as developed by the Manager, Professional Development. (Association Office contact is Manager, Professional Development.) *Committee definition revised Jun 1980.*

Chairman, MIRIAM H. TEES, McGill University, Graduate School of Library Science, 3459 McTavish St., Montreal P.Q. Canada H3A 1Y1 [514/392-5943] (1979-82); M. EVALYN CLOUGH (1981-84); LAURA GASAWAY (1977-82); MARION HART (1980-83); LYNN C. HEER (1980-83); JAMES L. OLSEN, JR. (1981-84); HOLLACE RUTKOWSKI (1981-84). [Board Proctor: JACK LEISTER.]

*Finance*

Five members, the Chairman to be the Association Treasurer serving a three-year term; the remaining members, one of whom shall also be a member of the Board of Directors, to be appointed for overlapping terms of two years each.

The Committee shall maintain continuing surveillance over all income and expenditures, funds and investments of the Association; it shall advise on investment policies. The Committee shall review and endorse the annual budget prepared by the Executive Director for presentation to the Board of Directors; it shall advise any component unit of the Association on the availability of funds for nonbudgeted items. The Committee may make recommendations to the Association Office Operations Committee concerning audit reports and the selection of external auditors. (Association Office contact is the Executive Director.) *Committee definition revised Jan 1977.*

Chairman, DOROTHY KASMAN, Coopers Lybrand, Library "Private," 1251 Avenue of the Americas, New York, NY 10020 [212/536-2854] (1979-82); LESTER M. BRESLAUER (1980-83); ELLEN MILLER (1981-83); N. TERRY MUNGER (1978-82); JANET RIGNEY (1981-82). [Board Proctor: GEORGE GINADER.]

*Government Information Services*

Five members with overlapping terms of two years each, with at least one member based in the Washington, D.C. area and one member from a Chapter in Canada. No member of the Committee shall be an employee of either the government of the United States or Canada.

The Committee shall survey the policies, services, and products of government information-producing, publishing, and printing agencies, as they affect special librarians, and decide upon and take appropriate action in these areas. Such action can include interviews with heads of agencies, questionnaires on the effectiveness of services or products, open meetings at Conferences, coordination of activities within Chapters, or any other approaches

which seem advisable (Association Office contact is the Executive Director.) *Committee definition revised Jun 1980.*

Chairman, SUSAN B. ROUMFORT, New Jersey State Library, 185 W. State St., Trenton, NJ 08625 [609/292-6210] (1981–83); JANE COONEY (1981–82); CHARLES OLSEN (1979–82); BARBARA F. PERRY (1981–83); KENLEE RAY (1981–83). [Board Proctor: RUTH SMITH.]

### *Government Relations*

Five members appointed for overlapping terms of three years each, including two coordinators: one for Canada and one for the United States.

The Association's President and Executive Director are responsible for carrying out SLA's government relations program. To support their function, the Committee shall: 1) review and monitor federal governmental activities (except those assigned to other Association committes) affecting special libraries and information centers; 2) draft position statements, consistent with SLA's Government Relations Policy Statement, to be presented to the legislative units of the federal governments, and assist in representing SLA's interests at hearings regarding federal legislation, as appropriate; 3) prepare information to be shared with Association members about governmental activities affecting the professional concerns of special librarians and information managers through the Association's publications, and at Annual Conferences; and 4) collect and review information from Chapter and Division representatives about needed legislative action concerning the interests of the Association, and, with the advice of the Executive Director, recommend appropriate action. (Association Office contact is the Executive Director.) Committee def. adopted

Chairman and U.S. Coordinator, GLADYSANN WELLS, Special Assistant to the State Librarian, New York State Library, Cultural Education Center, Rm. 10D36, Albany, NY 12230 [518/474-4660] (1981–82); Canadian Coordinator, JANE BEAUMONT (1981–82); BEVERLY BENDELL (1981–82); ANN T. BERG (1980–82); WILLIAM PETRU (1981–82). [Board Proctor: RUTH SMITH.]

### *Networking*

Seven members appointed for overlapping terms of three years each. One member shall be the SLA representative to the Library of Congress Networking Advisory Committee; and one member shall be the SLA representative to the National Periodical Systems Advisory Committee.

The Committee shall: 1) be informed on current activities in library and information science networks; 2) develop plans for liaison by the Association with other professional associations and organizations involved in network planning and activities; 3) develop guidelines for participation in cooperative network programs by members of the Association. (Association Office contact is the Executive Director.) *Committee definition revised Jun 1980.*

Chairman, JAMES K. WEBSTER, SUNY Buffalo, Science & Engineering Library, 223 Capen Hall, Buffalo, NY 14260 [716/636-2946] (1979–82); (1978–82); EVELYN W. ARMSTRONG (1981–84); SALLY J. BARNUM (1981–84); NAOMI CLIFFORD (1981–84) DIAN GILLMAR (1980–83); VICTORIA ROBERTS (1981–82); SHARON VIPOND (1978–84). [Board Proctor: JAQUELINE DESOER.]

### *Nominating*

A Nominating Committee for each election of Members to the Board shall be elected by the Board at least one year before the closing date established for the Committee's report. This Committee shall be composed of five Members, no one of whom shall be a member of the Board. The senior two of the six Directors shall present to the Board the names of five candidates for election to the Nominating Committee, one of whom shall have been the chairman of the Nominating Committee in the immediately preceding year, and the two senior Directors shall also designate the candidate to be chairman of the Committee.

Membership should have a wide geographic spread with representation from as many Divisions as possible. The Committee shall seek recommendations for nominees from suitable sources in the Association, especially from Chapter officers and Division officers. It shall select a balanced slate of nominees for Association officers and mem-

bers of the Board of Directors, and upon their acceptance shall present the slate to the Board of Directors. (Association Office contact is the Executive Director.) *Committee definition adopted Oct 1976.*

NOMINATING COMMITTEE FOR SPRING 1982 ELECTIONS

Chairman, RICHARD L. FUNKHOUSER, Purdue University, Math/Science Library, West Lafayette, IN 47907 [317/494-8711]; MARY LOU KOVACIC; ELLIS MOUNT; LOU THOMAS; SHARON VIPOND.

NOMINATING COMMITTEE FOR SPRING 1983 ELECTIONS

Appointments to be announced in October 1981. [Board Proctor: JANET RIGNEY]

***Positive Action Program for Minority Groups***

Five members appointed for overlapping terms of three years. The functions of the Committee require that members should have a particular interest in minority groups and several should themselves be members of such groups.

The Committee shall plan, direct, and monitor a positive action plan for the Association in accordance with its policy statement for a Positive Action Program. A positive action program is defined as one that commits the Association to a variety of activities that will encourage and assist members of minority groups in entering and advancing in the field of special librarianship and information science. Examples of activities include public relations, scholarship programs, publishing, recruitment and encouraging membership in the Association. The Committee shall initiate and develop Association-wide programs, and coordinate and advise on programs undertaken by groups; it shall undertake particular projects when requested by the Board of Directors, and shall report regularly to the Board. (Association Office contact is the Assistant Executive Director.) *Committee definition revised Jun 1974.*

Chairman, THOMASINA JONES, Institute for Defense Analyses, Technical Information Services, 400 Army-Navy Drive, Arlington, VA 22202 [703/558-1458] (1981-84); GLORIA H. BROADDUS (1980-83); CAROLYN J. HARDNETT (1980-83); JOHN D. HILL (1979-82); BERNICE R. JONES (1979-82). [Board Proctor: MARY VASILAKIS.]

***Publications***

Three members appointed for overlapping terms of two years each. The committee shall serve in an advisory capacity to the Manager, Publications Department in planning the scope and subject matter of the Association's serial and non-serial publications. (Association Office contact is the Manager, Publications Department). *Committee definition adopted June 1980.*

Chairman, DAVID E. KING, Standard Educational Corporation, 200 West Monroe St., Chicago, IL 60606 [312/346-7440, ext. 107] (1980-82); DEL SWEENEY (1981-83); ROBERT SPERLING (1981-83). [Board Proctor: CHARLES BAUER.]

***Publisher Relations***

Five members appointed for overlapping terms of two years each, these members also to serve on the Association of American Publishers/Special Libraries Association Joint Committee. The Committee shall represent SLA in relationships with various publishers so that mutual problems can be discussed and solved. The Committee shall detect problems as they arise and seek out appropriate publishers involved. Circumstances will dictate the best method of approach, whether by meeting, correspondence or other means of dealing with the publishers. Representatives of other library associations may be invited to attend such meetings, when such action is appropriate. The Committee's scope of interest includes format of literature, pricing of literature, promotional techniques of publishers, trends in types of publications, and similar items. (Association Office contact is the Manager, Publications Department.) *Committee definition revised Oct 1971.*

Chairman, JOHN PATTON, 28 Station Plaza S., Apt. 3K, Great Neck, NY 11021 [516/286-6100] (1981-83); ELIZABETH B. DAVIS (1980-82); CORNELIA KELLEY (1978-82); ELIZABETH S. KNAUFF (1981-83); PATRICIA K. MARSHALL (1981-83). [Board Proctor: CHARLES BAUER.]

# COMMITTEES

### *Research*

Five members appointed for overlapping terms of three years. The Committee shall encourage and promote serious studies which will increase the understanding or improve the techniques of special librarianship and information science. The Committee shall: 1) survey current active research, point out areas which should be studied, and suggest suitable projects; 2) evaluate, select, and recommend support of research proposals submitted by units of the Association, or individuals, or groups; 3) cooperate with other associations, schools, or organizations which support appropriate research; 4) recommend the amount of financial support and its allocation to any of the foregoing. (Association Office contact is the Executive Director.) *Committee definition adopted Sep 1967.*

Chairman, MARK BAER, Hewlett Packard Co., 1501 Page Mill Rd., Palo Alto, CA 94304 [415/857-3901] (1981-84); NEAL K. KASKE (1979-82); APHRODITE MAMOULIDES (1981-84); NANCY D. ANDERSON (1981-84); VIRGINIA STERNBERG (1980-83). [Board Proctor: M. ELIZABETH MOORE.]

### *SLA Scholarship*

Three members appointed for overlapping terms of three years each; each member to serve one year as chairman. This Committee shall recommend annually to the Board of Directors the number of scholarships to be awarded, in accordance with the approved regulations governing the Scholarship Fund. The Committee shall receive and review applications for scholarships, present the name or names of the candidate or candidates to the Board for approval, and initiate publicity regarding SLA scholarships. (Association Office contact is the Assistant Executive Director.) *Committee definition revised Jun 1971.*

Chairman, RON COPLEN, Harcourt Brace Jovanovich, 757 Third Ave., New York, NY 10017 [212/888-3497] (1979-82); MARIE A. GADULA (1981-84); ELLEN TODD HANKS (1980-83). [Board Proctor: MARY VASILAKIS]

### *Standards*

Five members appointed for overlapping terms of three years each. The Committee shall: 1) identify existing standards for services, facilities, staffs and resources of special libraries and information centers; 2) disseminate to Association members information about standards affecting special libraries and information centers; and 3) serve as liaison between the Association and other organizations concerned with standards. (Association Office contact is Manager, Professional Development.) *Committee definition revised Jun 1980.*

Chairman, AUDREY N. GROSCH, University of Minnesota, Library Systems Dept., S-34 Wilson Library, Minneapolis MN 55455 [612/376-8139] (1980-82); DORIS MARSHALL (1978-82); ROBERT A. SEAL (1978-83). [Board Proctor: JACQUELINE DESOER.]

### *Statistics*

Three members appointed for overlapping terms of three years each, one of whom shall be the SLA representative to the ALA Statistics Coordinating Committee. The Committee shall: 1) survey the statistical needs of special libraries and information centers, and identify definitions useful for internal management and for comparative purposes; 2) inform the Association members of activities and developments in the field of statistics; and 3) serve as liaison with individuals and organizations engaged in collecting, compiling and evaluating library and information center statistics. (Association Office contact is Manager, Professional Development.) *Committee definition adopted Feb 1979.*

Chairman, BETH ANSLEY, Georgia Power Company, Library 13th Fl., 270 Peachtree St., N.W., Atlanta, GA 30302 [404/522-6060 ext. 2303] (1980-83); RUE E. OLSON (1980-83); DAVID A. SELF (1981-84). [Board Proctor: JACQUELINE DESOER.]

### *Student Relations Officer*

The Student Relations Officer, appointed for a two-year term, shall coordinate activities between the Association and students by maintaining close contact with faculty

advisors of recognized SLA Student Groups and with the Association Office contact. He shall endeavor to expand the formation of additional Student Groups by keeping in close liaison with schools that might wish to establish such groups. It shall also be the Student Relations Officer's obligation to plan a coordinated program of activities for students at the Association's Annual Conference, cooperating closely with the SLA Conference and Exhibits Coordinator, the Chapter and Division Cabinets and the faculty advisors of the SLA Student Groups. (Association Office contact is Assistant Executive Director.) *Definition adopted Jan 1975.*

LINDA C. SMITH, University of Illinois, Graduate School of Library Science, 410 David Kinley Hall, Urbana, IL 61801 [217/333-7742 or 0402] (1980–82). [Board Proctor: MARY VASILAKIS;]

### *Tellers*

Three members from the area of the Association Office. Appointment shall be for one year each with the chairman having been a member the previous year. The Committee shall validate and count all mail ballots of the Association and announce the results of such ballots. When the need arises, the Committee shall count votes taken at the Annual Business Meeting. (Association Office contact is the Assistant Executive Director.) *Committee definition revised Jun 1974.*

Chairman, BETH O'MAHONEY, Goldman, Sachs & Company, 55 Broad St., New York, NY 10004 [212/676-7396] (1979–82); BERT SCHACHTER (1980–82); MERYL SCHATZBERG (1980–82). [Board Proctor: JANET RIGNEY.]

### *H. W. Wilson Company Award*

Five members, appointed for overlapping two-year terms, with not more than three from library school faculties; the chairman shall have been a member the previous year.

The Award shall be given for the best paper published in *Special Libraries* during the previous calendar year. The Committee shall judge the entries for the award and report the winner to the Board of Directors for announcement during the Annual Conference. The Committee shall also be responsible for the periodic review of the guidelines and criteria for award selection. (Association Office contact is Editor, *Special Libraries.*) *Committee definition revised Jun 1974.*

Chairman, RONALD R. SOMMER, Head, Reader's Services, University of Tennessee, Center for Health Sciences, Library, 800 Madison Ave., Memphis, TN 38163 [901/528-5634] (1980–82); ROBERT M. BALLARD (1979–82); MORTON R. BROWN (1981–83); CAROLINE S. MORRIS (1980–82); SUZANNE WISE (1980–82). [Board Proctor: M. ELIZABETH MOORE.]

## SPECIAL COMMITTEES

The Board Proctor for all Special Committees is JAMES B. DODD.

### *Long Range Planning*

Chairman, MARJORIE H.K. HLAVA, Access Innovations, Inc., P.O. Box 40130, Albuquerque, NM 87196 [505/256-0763]; JOHN F. BORBELY; NANCY W. BUSH; JOSEPH E. JENSEN; JOHN F. KANE; MAUREEN M. ROE; ENID SLIVKA.

### *SLA's 75th Anniversary*

Chairman, ROBERT W. GIBSON, General Motors Corp., Technical Center, Research Lab Library, Warren MI 48090 [313/575-2736]; BERYL L. ANDERSON; DAVID R. BENDER; JOE ANN CLIFTON; VIVIAN HEWITT; ROBERT KRUPP; FRED ROPER.

# JOINT COMMITTEES

The Board Proctor for all Joint Committees is JAMES B. DODD.

### *Association of American Publishers—SLA Joint Committee (AAP-SLA)*

JOHN PATTON, 28 Station Plaza S., Apt. 3K, Great Neck, NY 11021 [516/286-6100] (1981-83); ELIZABETH B. DAVIS (1980-82); CORNELIA KELLEY (1978-82); ELIZABETH S. KNAUFF (1981-83); PATRICIA K. MARSHALL (1981-83).

### *NCLIS/SLA Task Force on the Role of the Special Library in Nationwide Networks and Cooperative Programs*

Chairman, PATRICIA W. BERGER, HELMUT ALPERS; MARK H. BAER; DAVID R. BENDER; ROBERT W. BURNS, JR.; JAMES B. DODD; GLYN T. EVANS; ROBERT W. GIBSON, JR.; MARGARET H. GRAHAM; SARA I. HILL; MARY LOU KOVACIC; M. BRUCE MAXIAN; PHYLLIS MIRSKY; BARBARA M. ROBINSON; BETTY TAYLOR; RUTH L. TIGHE; JAMES K. WEBSTER.

### *SLA-MLA Committee*

JACQUELINE J. DESOER, Chevron Research Co., Technical Information Center, Richmond, CA 94802 [415/237-4411 Ext. 4478]; JOHN C. HARRIS, Pennsylvania College of Podiatric Medicine A/V Library, Race & Eighth St., Philadelphia, Pa. 19107 [215/629-0300]. CAMI L. LOUCKS, Trinity Lutheran Hospital, Medical Library and Media Services, 31st and Wyandotte Sts., Kansas City, MO 64108 [816/753-0122].

### *Union List of Serials, Joint Committee*

SIGNE E. LARSON (1975-81; 1981-82).

# SLA REPRESENTATIVES

The SLA Representatives to various committees, councils, projects, and other organizations, shall serve for a term as deemed required by the sponsoring organization. If no term is specified, the term of appointment shall be for an Association year only, with reappointment by the incoming President required. These Representatives are responsible to the Board of Directors. Their duties are:
*1)* To represent, protect and promote the interests of the Association;
*2)* To present significant news of the organization;
*3)* To prepare, upon completion of the appointment or annually, a report to the Board of Directors; and
*4)* To make recommendations to the Board of Directors as to specific participation by SLA in projects and what such participation may require.

American Association of Law Libraries (AALL)—SARAH K. WIANT (1979-82; 1981-82).

American Library Association (ALA), Library Administration & Management Association (LAMA), Statistics Coordinating Committee—BETH G. ANSLEY (1981-82). ALA Reference & Adult Services Division, Inter-Library Loan Committee—ROBERT A. SEAL (1979-81; 1981-82). ALA Resources & Technical Services Division, Cataloging and Classification Section, Committee on Cataloging—MARY LARSGAARD (1981-82). ALA Government Documents Round Table (GODORT)—JOHN HENRY RICHTER (1980-81; 1981-82).

American National Standards Institute (ANSI), Finance Committee Z-39—DAVID R. BENDER (1980-81; 1981-82). Sectional Committee on Photographic Reproduction of Documents PH-5—LORRETTA KIERSKY (1966-81; 1981-82). Sectional Committee on Library and Information Science and Related Publishing Practices Z-39—RICHARD FUNKHOUSER (1978-81; 1981-82). Sectional Committee on Library Equipment and Supplies Z-85—DON T. HO (1966-81; 1981-82).

American Society for Information Science (ASIS)—JUDITH FIELD (1981-82).

Canadian Association of Special Libraries and Information Services (CASLIS)—JANE COONEY (1980-81; 1981-82).

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The Board Proctor for all Special Representatives is JAMES B. DODD.

# SLA REPRESENTATIVES

Canadian Library Association—SUSAN KLEMENT (1977-81; 1981-82).

Catholic Library Association (CLA)—MARY M. CATTIE (1981-82).

Church and Synagogue Library Association—ELIZABETH M. BURTON (1980-81; 1981-82).

CONSER Advisory Group—IRVING KLEMPNER (1979-81; 1981-82).

Continuing Library Education Network (CLENE)—ATEF O. ZIKO (1980-81; 1981-82).

Council of National Library and Information Associations (CNLIA)—GEORGE H. GINADER (1981-84) and DAVID R. BENDER (1979-82); Ad Hoc Committee on Copyright Law Practice and Implementation—EFREN W. GONZALEZ (1979-81; 1981-82).

Depository Library Council to the Public Printer—EDYTHE MOORE (1979-1982); JOHN HENRY RICHTER (1979-1981).

Federal Library Committee (Guest Observer)—RUTH S. SMITH (1976-81; 1981-82).

International Federation of Library Associations (IFLA)—PAT MOLHOLT (1980-81; 1981-82); Alternate, DAVID R. BENDER (1980-81; 1981-82). Special Libraries Division: Art Librarians Round Table—CLIVE PHILLPOT; Astronomical and Geophysical Round Table—PAT MOLHOLT; Biological & Medical Libraries Section—HERBERT BIBLO; Geography & Map Libraries Section—MARY MURPHY; Science & Technology Libraries Section—PAT MOLHOLT.

Library Binding Institute (LBI)—NANCY S. SELZER (1981-82).

Library of Congress Cataloging in Publication Advisory Committee—MARJORIE GORDON (1979-80; 1981-82).

Library of Congress Networking Advisory Committee—IRVING KLEMPNER (1978-81; 1981-82).

Medical Library Association (MLA)—CAMI LOUCKS (1980-81; 1981-82).

Music Library Association—NONE REPORTED.

National Federation of Access & Information Services (NFAIS)—GWYNETH HEYNES MALLISON (1976-81; 1981-82).

National Micrographics Association (NMA)—LORETTA J. KIERSKY (1963-81; 1981-82).

President's Committee for the Employment of the Handicapped—VIVIAN D. HEWITT (1981-82).

Theatre Library Association—DOROTHY L. SWERDLOVE (1970-79; 1979-81).

United Nations Educational, Scientific, and Cultural Organization (UNESCO), General Information Program (GIP), SLA Representative to the U.S. National Committee—RUTH E. PERKS (1981-82); Alternate—JAMES B. DODD (1978-82).

## Representatives to SLA From Other Organizations

American Association of Colleges of Pharmacy—PATRICIA PIERMATTI

American Association of Law Libraries—LAURA N. GASAWAY

American Society for Information Science—NONE REPORTED

Catholic Library Association—MARY JO DIMUCCIO

Church & Synagogue Library Association—ELIZABETH M. BURTON

Medical Library Association—RONALD R. SOMMER

Music Library Association—NONE REPORTED

National Federation of Access & Information Services—NONE REPORTED

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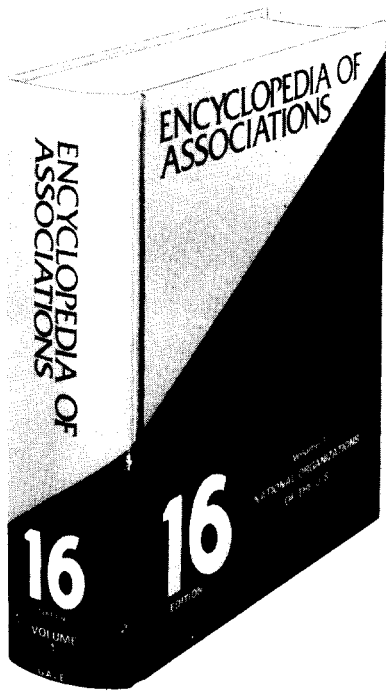


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